NAVI-CONNING 3000

(VERSION 4.01.00)

INSTALLATION GUIDE

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PREAMBLE

This chapter contains general information on the work with the manual.

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WARNINGS AND CAUTIONS

This document is intended for use by service engineers only, providing installation or service for Transas Ltd. navigation systems, and holding Transas Ltd. Certificates for aforementioned works.

WARNING!

Lethal Voltage Hazard!

Inside the equipment and in the cables lethal voltage hazard is present. When access covers are removed, lethal voltages may be exposed. Some capacitors used in the equipment take several minutes to discharge their stored voltages after the switching OFF, this is a lethal voltage hazard. Always set the supply switch-fuse to OFF and remove the fuses, before removing the access covers of the equipment.

Cables must be connected to the power supplies only provided with grounding.

Cables must not have damaged insulation and must exclude contact with parts conducting current.

WARNING!

Health Hazard!

When cleaning the inside of the equipment, take care not to inhale dust. The dust is a temporary health hazard, depending on individual allergies.

Units radiate heat and must be installed in such way that free air circulation is ensured.

It is necessary to strictly follow the requirements set forth in the operation manuals for computers and system's peripheral devices.

CAUTION!

Electrostatic Sensitive Devices (ESSDs)!

The equipment may contain ESSDs. Take care not to damage these devices by discharge of electrostatic voltages.

LIST OF DOCUMENTATION ON NAVI-CONNING 3000 PRODUCT

Navi-Conning 3000 (version 4.01.00). Installation Guide.

Navi-Conning 3000 (version 4.01.00). User Manual.

Navi-Conning 3000 (version 4.01.00). Alarm Station Functionality Description.

Navi-Conning 3000 (version 4.01.00). Data Recording System Functionality Description.

ABBREVIATIONS IN USE

- A – Ampere;
- AC – Alternating Current;
- ADC – Analog-to-Digital Converter;
- ASCII – American Standard Code for Information Interchange;
- CB – Conning Box;
- CIB – Conning Interface Box;
- COG – Course Over Ground;
- DC – Direct Current;
- DIN – DIN connector;
- Hz – Hertz;
- IEC – International Electrotechnical Commission;
- I/O – Input/Output;
- IPX/SPX – Internet Packet exchange/Sequenced Packet exchange;
- IRQ – Interrupt ReQuest;
- LAN – Local Area Network;
- MMD – Maritime Multi Displays;
- MNS – Marine Navigation Systems;
- NC 3000 – Navi-Conning;
- NMEA – National Marine Electronics Association;
- NS – Navi-Sailor;
- PC – Personal Computer;
- PCI – Peripheral Component Interconnect;
- ROT – Rate Of Turn;
- RPM – Revolution Per Minute;
- RS – Recommended Standard (232);
- Sec – Second;
- SOG – Speed Over Ground;
- TCB – Transas Conning Box;
- TFT – Thin Film Transistor;

- UPS – Uninterruptible Power Supply;
- UTC – Universal Time Coordinated;
- V – Volt;
- W – Watt;
- WP – Way Point;
- XTE – Cross Track Error.

PRINTING HOUSE CONVENTIONS

Sample of an entry	Comments on the use
Chapter 3	To highlight, in a printed document, names of this document sections
Date and Time	To highlight, in a printed document, names of program functions mentioned in this document
`TrkCvt.txt`	To highlight, in a printed document, messages, commands, files and other information supplied by the OS
C:\Transas\Navi-Conning	To highlight, in a printed document, a path to the menu, function, file, etc.
<Enter>	To highlight, in a printed document, names of keyboard keys
“Next”	To highlight, in a printed document, names of a window, page, option, button, etc.
TOOLS	To highlight, in a printed document, menu items mentioned in this document

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CHAPTER 1

NC Technical Specification

This chapter gives full technical and operational specifications for the Navi-Conning 3000.

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REFERENCE TABLE

Scope of supply	Navi-Conning
Software capabilities	
Basic configuration	
• Digital/Analog Data Input	Yes
• NMEA output	Yes
• NMEA Format Editor	Yes
• Predictor	Yes
• Recording Functionality	Yes
• Extendable Measurement Units Database	Yes
• Three Standard Screen Views for Parameters Display	Yes
• Playback Functionality	Option
• Custom made Screen Views (2-4 weeks depending on order complexity)	Option
• Alarm Station Functionality	Option
• Data Recording System (DRS) Functionality	Option
• DRS Playback Utility	
• Development of New Interfaces	Option
Hardware/accessories	
Conning Box by WAGO	
• 750-314 “Main Module”	Option
• 750-600 “End Module”	Option
• 750-403 “Digital Input Module”	Option
• 750-476 “2 Channel analog Input Module (-10/10 V)”	Option
• 750-513 “Digital Output Module”	Option
• 750-454 “2 Channel analog Input Module (4-20 mA)”	Option
• 750-468 “4 Channel analog Input Module (0-10 V)”	Option
Computers	
• RS3 Basic Data Processing Unit	Option
• RS3 EC Data Processing Unit	Option
• RS4 Basic Data Processing Unit	Option
Uninterruptible Power Supply (UPS)	
• UPS SMART 700 230V	Option
• UPS Smart 19” 700 230V	Option
Monitors	
• 19” TFT Hatteland JH 19 T04 MMD E1 (1280 x 1024) Monitor	Option
• 20” TFT, Hatteland JH 20 T03 MMD E1 (1280 x 1024) Monitor	Option
• 20” TFT, Hatteland JH 20 T04 MMD E1 (1280 x 1024) Monitor	Option
• 23” TFT Hatteland JH 23 T01 MMD E1 (1280 x 1024) Monitor	Option
Input Units	
• ES4 Dedicated Keyboard	Option
• Windows Keyboard (English)	Option
Consoles	
• Transas Console Version 5.2	Option
• Console Reduction Frame 23 “TFT/19” TFT. This unit is an optional component for Console Version 5.2	Option
• Console Reduction Frame 23 “TFT/20” TFT. This unit is an optional component for Console Version 5.2	Option
• Desktop Console Version 5.0	Option

Scope of supply	Navi-Conning
Opto Isolated Converter	
• DB-9 (without cable)	Option
• DB-25 (without cable)	Option
• Current Loop	Option
Navi-Conning Carton	Yes

SOFTWARE TECHNICAL SPECIFICATION

General

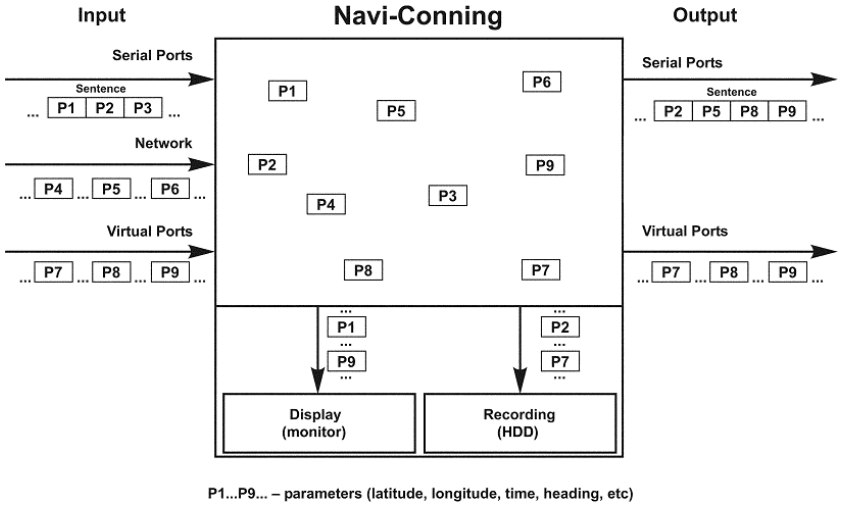
Purpose of Navi-Conning Program

Navi-Conning (NC) program is intended for the processing and recording of parameters supplied via different channels from external sources of information.

The received and processed parameters are used further for the following purposes:

- Display on the NC screen;
- Data conversion from one digital/analog format (**Input**) to another (**Output**).

Note: Output of analog data converted to NMEA is supported by Transas Conning Box only.



P1...P9... – parameters (latitude, longitude, time, heading, etc)

The NC program is capable of supporting the processing of any parameters supplied both, in ASCII code and in the binary form. The program is structured so that it allows addition of any interface ordered by the Customer (see paragraph **Software New Options**).

Software and Hardware Requirements

If the customer does not use Transas Marine hardware facilities, it will be necessary to select hardware and software meeting the following minimum requirements:

- Hardware:
  - CPU: Pentium-III 700 MHz or higher;
  - RAM 96 Mb minimum (256 Mb recommended);
  - VRAM" 16 Mb;
  - 3,5" fl-drive;
  - SVGA;

  - HDD: 2,0 Gb free disk space (120 Gb recommended);
  - CD drive;
  - 3.5” FDD (recommended);
  - Parallel Port;
  - Net card 100Mb Fast Etherlink, 100Mb Fast Etherlink Hub, TP5 category cables.
- Software:
  - Windows 2000 Professional Service Pack 3;
  - Windows NT 4.0 English version, Service Pack 5 (not under warranty);
  - Windows XP Professional (not under warranty).

ATTENTION!

It is not advisable to use the computer for other purposes. Other programs loaded in the RAM may have adverse effect on the system operation.

For hardware and software requirements for Data Recording System see **NAVI-CONNING 3000 (V. 4.01.00). DATA RECORDING SYSTEM FUNCTIONALITY DESCRIPTION** document.

Reception/Processing and Output of Data from/to External Devices

Data Exchange Channels

The NC uses three types of channels for the data exchange with external devices:

- Serial (RS232-type) ports;
- Virtual ports, where the NC and other programs operate on the same computer. In this case, the NC assumes this information as supplied from the serial port;
- Network. When operating via the network card, the NC can use parameters networked by Navi-Sailor program. Exchange of information with the NS2400 and NS3000 ver.3.xx is provided via IPX/SPX protocol, with NS3000 ver.4.xx via TCP/IP protocol.

Interfaces

NC program supports the following data exchange formats and their versions:

- NMEA. Operation in accordance with this protocol is via serial RS232-type and virtual ports. The NC allows operation with the following versions of NMEA sentences:
  - NMEA 0183 version 3.01 (Jan 2002);
  - NMEA 0183 version 3.0 (Jul 2000)/IEC 61162-1 edition 2 (Jul 2000);
  - NMEA 0183 version 2.1 (Oct 1995)/IEC 61162-1 edition 1 (Nov 1995).

  For the user convenience sake, databases of sentences from each version are generated. They allow one of the sentences to be selected for the further use, or the sentences to be used as the basis for the formation of sentences the user requires, by using the Sentence Editor.
- Transas Conning Box (analog/digital) converter;
- WAGO (analog/digital) converter;
- Binary TRANSAS proprietary format for an interface with NS electronic chart system via LAN.

NC – NS Possible Configuration

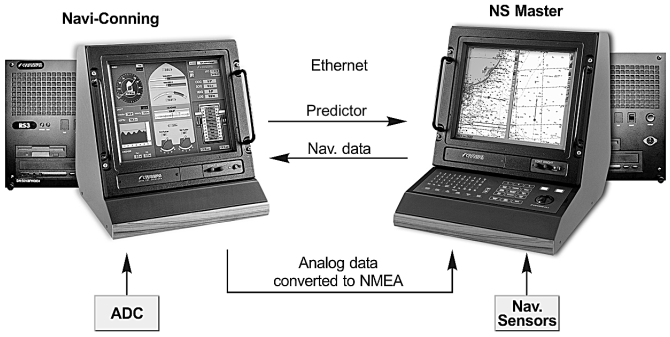
In case of the NC network operation, it can receive parameters from Navi-Sailor electronic chart system.

ATTENTION!

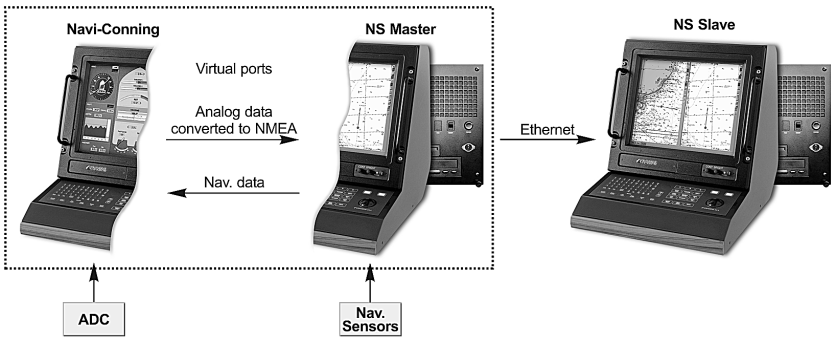
For the NS operation in the network configuration, the network operation option should be permitted by the NS license.

Data exchange uses IPX/SPX protocol. Provided below are the available network configurations with their features and disadvantages:

- NC “Slave” – NS “Master”;



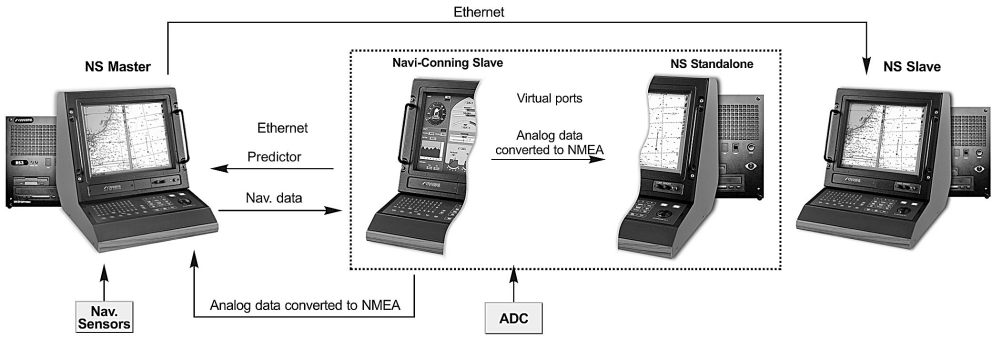
- NC “Standalone” with NS “Master” – NS “Slave”.



Note: There exist the following restrictions for this configuration:

- This configuration does not provide “Predictor” functionality or the graphic display of a route on Navi-Conning Screen Views;
- Order of the product installation: NC 3000, then NS3000;
- If the system is used simultaneously with the NS2400 or NS3000 v.3.xx, the color palettes are switched separately for each application.

- NS “Master” – NC “Slave” with NS “Standalone” – NS “Slave”.



Note: In this configuration, reception of parameters networked by “Master” station will not be available for the NS “Standalone”.

NMEA Format Editor

Purpose of the Editor

The principle underlying the NC program implies extraction of parameters from the incoming data stream and their further processing. With the use of NMEA interface, information is supplied to the NC in the form of sentences constructed in accordance with the international standards. Stored in the NC database are the most commonly used sentences of various NMEA standard versions. However, any NMEA sentences can be processed by means of the NC and added to the custom made sentence database. This is what the Sentence Editor is intended for.

The use of Sentence Editor allows:

- To supplement the database with a new sentence to extract the parameters contained in this sentence;
- Use the of available parameters for creating a sentence that can be output to any external user via Serial or Virtual ports.

Editor Capabilities and Limitations

The processing of NMEA/IEC sentences is based on the principles built into NMEA standard, although the program’s versatility allows deviations from the observance of the standard rules and processing of sentences not stipulated by the standard.

The sentences processed by NC program are required to fulfil the following NMEA standard rules:

- Sentences consist of characters represented in ASCII code;
- Each type of sentence consists of a fixed number of fields (otherwise refer to “Development of a New Interfaces” software option);
- There is a definite order of parameters in the sentence.

NC program allows the following deviations from the standard to be used:

- Sentence may have any sentence start symbol (!aaccc,c---c*hh<CR><LF>);
- Sentence may have any source identifier (TALKER), but always 2 symbols ($bbccc,c---c*hh<CR><LF>);
- Sentence may have any sentence type identifier (NAME), but always 3 symbols ($aaddd,c---c,*hh<CR><LF>).

The NMEA format editor has the following limitations:

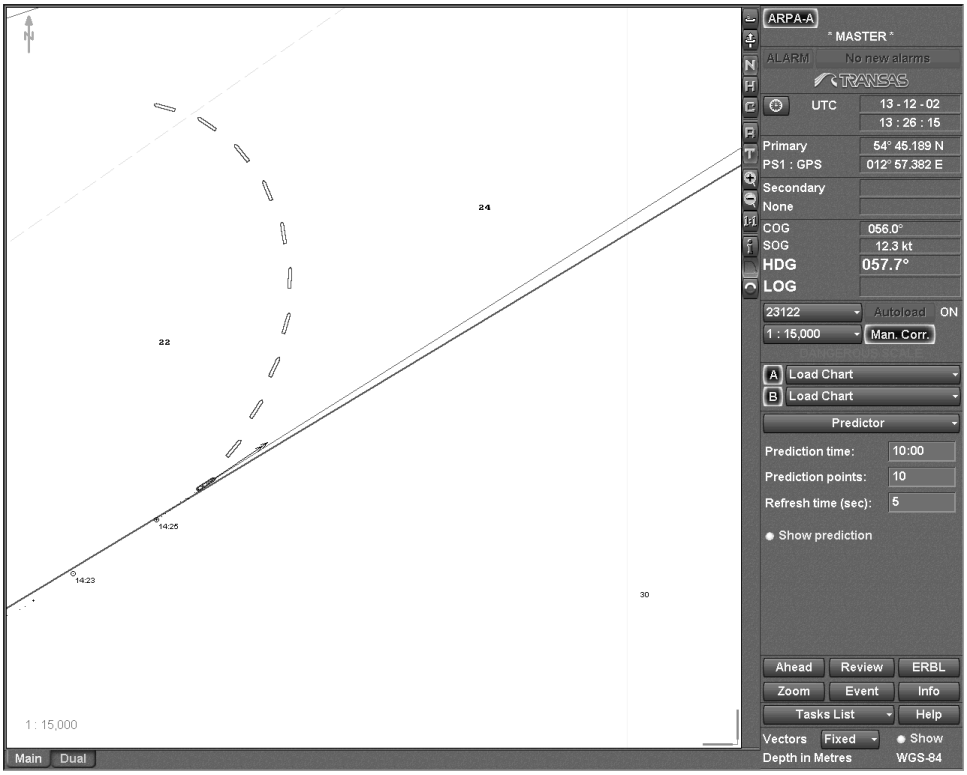
- All parameters are always independent of each other (NMEA sentences such as XDR, etc.);
- Sentences containing the parameters are always independent of each other – NMEA sentences such as WPL, GSA, etc. (otherwise refer to “Development of a New Interfaces” software option);
- There is no capability to transmit sentences with same names to Output via one or more channels);
- Sentences containing additional parameter characteristics (e.g. True/Magnetic, Theoretical/Relative, N/S, E/W, etc.) cannot be connected to the Output;
- There is no capability to receive and transmit (Output/Retransmission) sentences via the same port;
- There is no simultaneous output and retransmission of sentences within the same port.

Recording Functionality

The data recording is carried out automatically for all set up channels. The process of recording stops to accumulate the data as 700Mb of free disk space is left. Futher recording is carried out “by cycle” (previous data is override by latest one).

Predictor (For Trial Purposes Only)

Predictor is a program built into NS 3000 ver.3.xx, which allows the ship position in a set time interval (referred to as prediction time) to be determined from the current data from the navigational sensors and on the basis of the ship mathematical model.



For its operation, the predictor uses the following data:

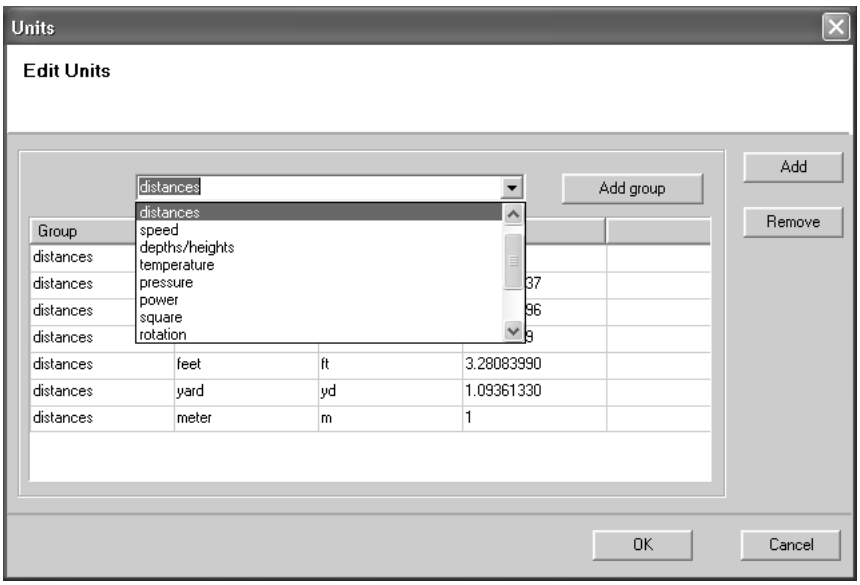
- Static ship information contained in the configuration file (length, breadth, displacement, draft, etc.). In the current NS 3000 version, these parameters are not edited. The change of this data implies the providing of a new custom made set of mathematical model files;
- Dynamic information supplied by Navi-Sailor 3000:
  - Ship heading (Heading);
  - Axial (SOG value is transmitted) and transverse ship speed over the ground (not transmitted in the current NS version);
  - Rate of turn (ROT);
  - True wind speed and direction;
  - Speed of the current over the ground in the current ship position;
  - Sounder depth.
- In addition, the NS 3000 ver.3.xx user interface allows the following to be set:
  - Prediction time;
  - Number of calculated ship positions (10 max);
  - Predictions refresh time.
- Dynamic information supplied by Navi-Conning 3000:
  - Number of bow thrusters, as well as rpm and propeller pitch ratio for each thruster;
  - Number of stern thrusters, as well as rpm and propeller pitch ratio for each thruster;
  - Number of propellers, as well as rpm and propeller pitch ratio for each propeller;
  - Number of rudders and rudder angle for each.

These parameters are supplied by relevant sensors, the NC program receives, calibrate and networks them to NS 3000 ver.3.xx. NS, in its turn, relays this data to the predictor via the proprietary protocol (COM interface) developed by the SSPA company.

Extendable Measurement Units Database

NC can receive parameters from sources of information and display them on the Screen Views in any measurement units. To do this, the program re-calculates, by using factors, the available parameter measurement units to the measurement units the user needs.

By default, NC program provides the metric system factors database.
For the convenience sake, conversion factors are divided into groups according to the measured parameter values. For the addition of a new group or some conversion factor for the measurement units within an existing group, **Units** database is used.



Three Screen Views for Input Parameters Display

General

A standard NC program set provides Four Screen Views. Three of them are formed according to their functional purpose from the viewpoint of navigation:

- Sea;
- Mooring;
- Narrow.

The Screen View represents a set of indicators displaying the input parameters on the NC' screen. Indicators are adjusted and linked to parameters in "Navi-Conning 3000 Setup" application.

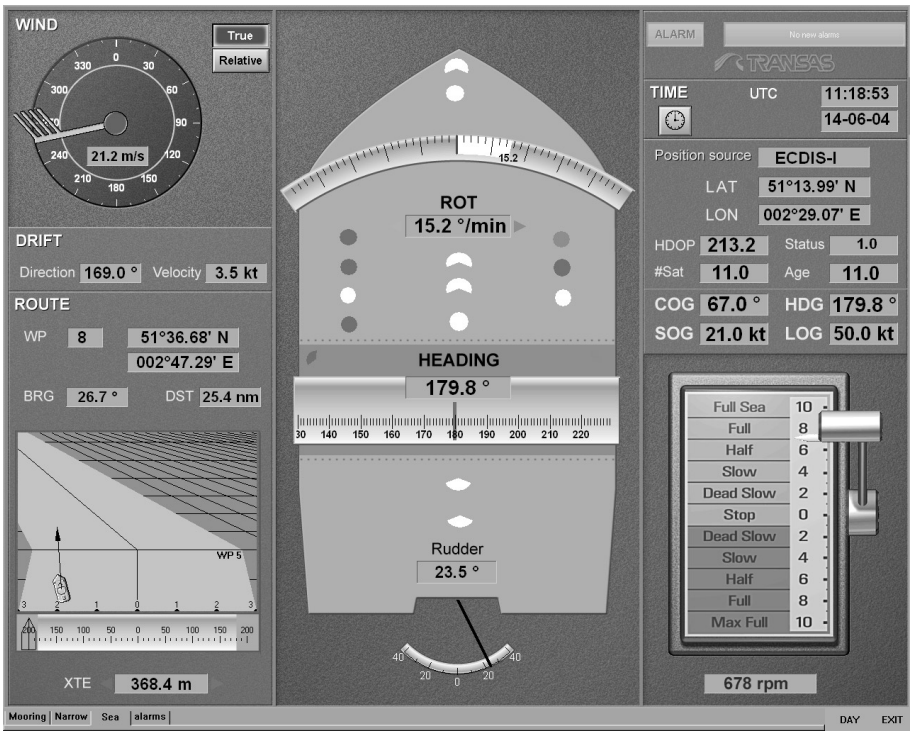
The fourth "Alarms" Screen View is used for the indication of the NC system alarm status.

Depending on the ambient light, the NC offers the selection of screen palettes:

- **Day** – daylight;
- **Night** – night.

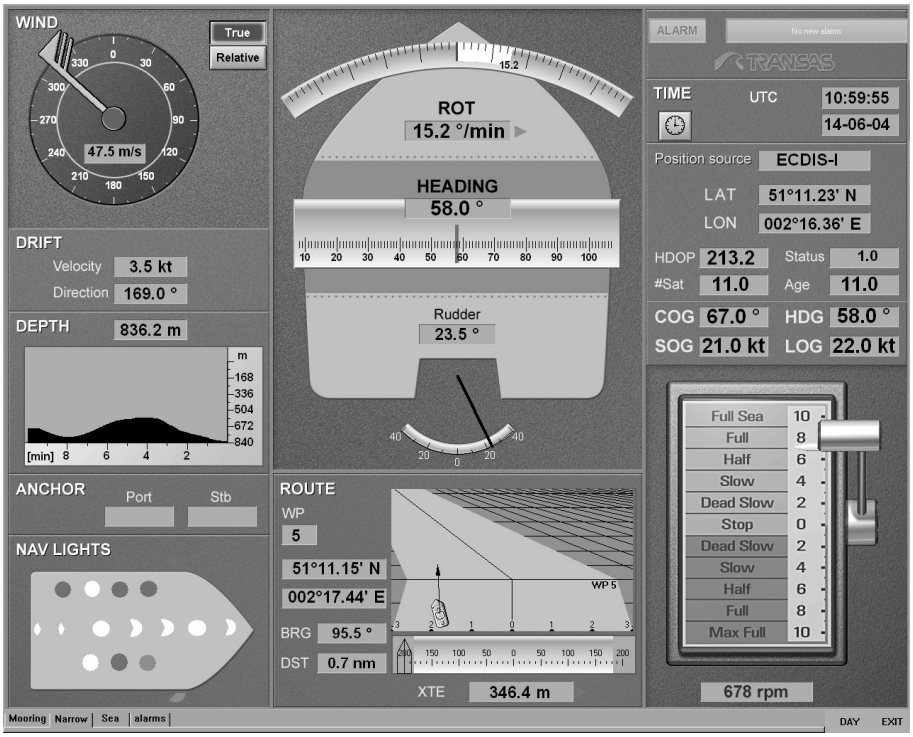
“Sea” Screen View

“Sea” Screen View is intended for the display of parameters required when sailing in the open sea.



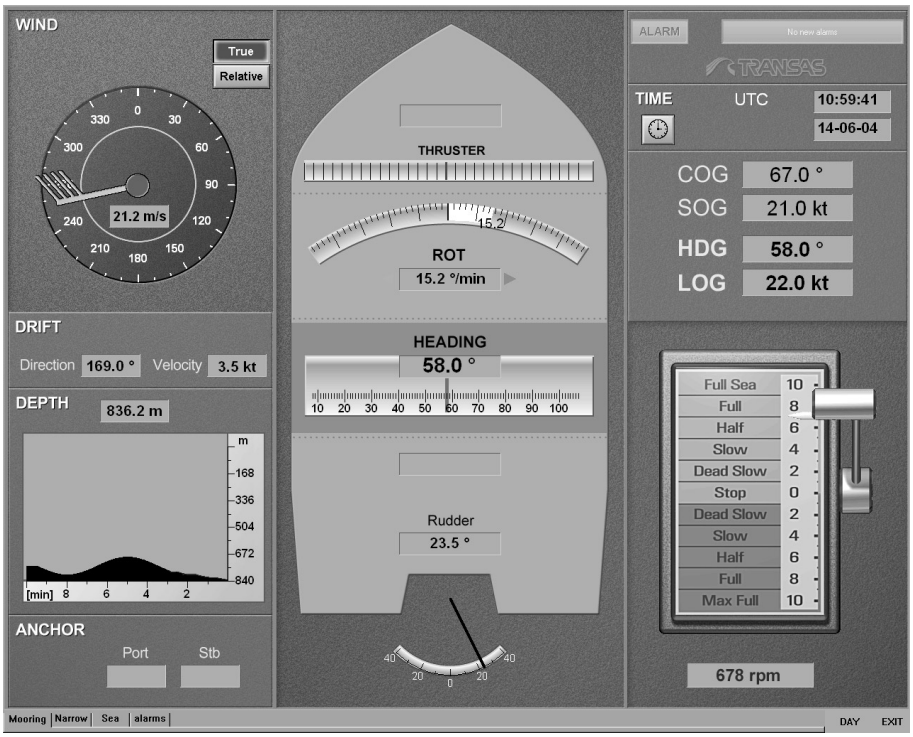
“Narrow” Screen View

“Narrow” Screen View is intended for the display of parameters required when sailing in the area with adverse navigational conditions.



“Mooring” Screen View

“Mooring” Screen View is intended for the display of parameters required during the mooring operations.



“Alarms” Screen View

“Alarms” Screen View represents a list of all the active alarms and their current status.

Name	Source	Status	Time	Acknowledge	Age
Red Lower Warning Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
White Warning Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Stb. Side Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Port Side Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Top Light, Rear, Upper-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Top Light, Rear, Lower-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Red Fishing Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Green Fishing Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Red Central Warning Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Top Light, Front-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Red Upper Warning Light-Lights [No Data]	Transas CB	Active	10:51:32		00:01
Thruster-Current [No Data]	Transas CB	Active	10:51:43		00:01
Pitch-Voltage [No Data]	Transas CB	Enabled			
RPM-Current [No Data]	Transas CB	Active	10:51:43		00:01
Anchor portside-Current [No Data]	Transas CB	Active	10:51:43		00:01
Anchor starboardside-Current [No Data]	Transas CB	Active	10:51:43		00:01
Depth-Voltage [No Data]	Transas CB	Active	10:51:31		00:01
Rudder Angle-Voltage [No Data]	Transas CB	Active	10:51:58		00:01
ROT-Voltage [No Data]	Transas CB	Active	10:52:30		00:00
curcrs-Route [No Data]	ECDIS-I	Enabled			
nextcrs-Route [No Data]	ECDIS-I	Enabled			
GGA age-Positioning [No Data]	ECDIS-I	Enabled			
GGA status-Positioning [No Data]	ECDIS-I	Enabled			
waypoint-Route [No Data]	ECDIS-I	Enabled			
GGA satellite number-Positioning [No Data]	ECDIS-I	Enabled			
GGA HDOP-Positioning [No Data]	ECDIS-I	Enabled			
Waypoint Longitude-Route [No Data]	ECDIS-I	Enabled			
Waypoint Latitude-Route [No Data]	ECDIS-I	Enabled			
Latitude offset-NS3000 [No Data]	ECDIS-I	Enabled			
Position Longitude-NS3000 [No Data]	ECDIS-I	Enabled			
Position Latitude-NS3000 [No Data]	ECDIS-I	Enabled			
XTE-Route [No Data]	ECDIS-I	Enabled			
BTW-Route [No Data]	ECDIS-I	Enabled			
DTW-Route [No Data]	ECDIS-I	Enabled			
Wind Relative speed-NS3000 [No Data]	ECDIS-I	Enabled			
Wind Relative angle-NS3000 [No Data]	ECDIS-I	Enabled			
Wind True speed-NS3000 [No Data]	ECDIS-I	Enabled			
Wind True angle-NS3000 [No Data]	ECDIS-I	Enabled			

Mooring | Narrow | Sea | alarms DAY EXIT

The alarm setting is made for each parameter in “Navi-Conning Setup” application. In the current NC version, there are three types of alarms determined by their generation algorithms:

- **No data** – no data in the set time interval (30 seconds by default);
- **Valid/Invalid** – reception of invalid data (for the parameters which have “status” characteristic);
- **Out of range** – reception of value, which is out of the values range specified by the user.

The indicator colour corresponds to the alarm status:

- Green colour – no alarm generation;
- Red colour – the alarm was triggered off and then acknowledged by the operator;
- Red flashing colour – the alarm was triggered off but has not yet been acknowledged.

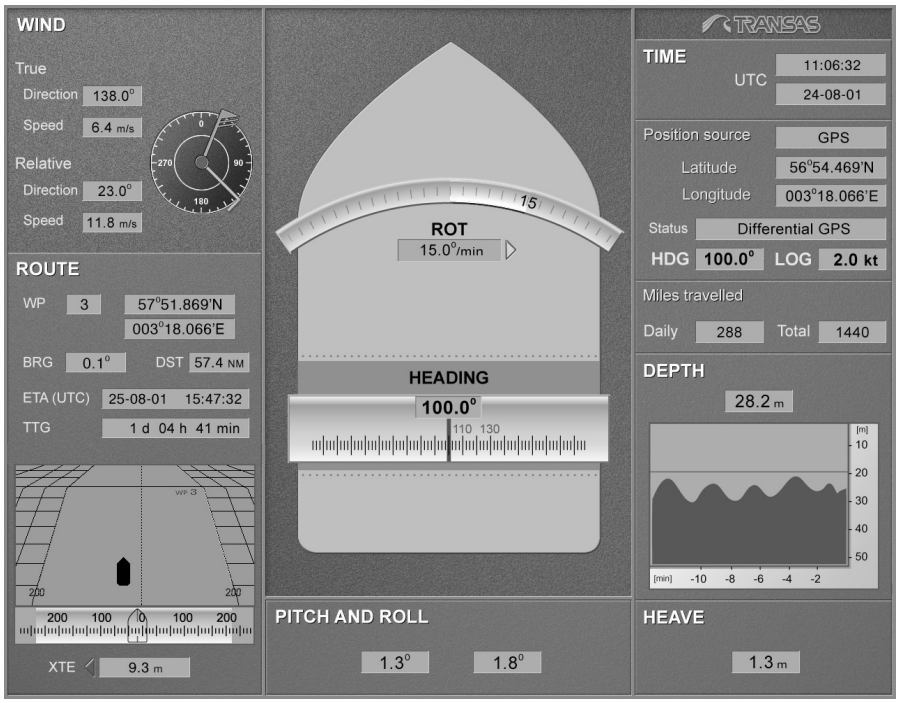
ATTENTION!

In the case of the Alarm Station option use, the “Alarms” Screen View is disabled automatically. For details, see **NAVI-CONNING 3000 (V. 4.01.00). ALARM STATION FUNCTIONALITY DESCRIPTION**.

Alternative Screen Views for Input Parameters Display

The alternative Screen Views (SW) are available for use instead of the basic ones. The substitution of SW is performed by means of the Upload functionality.
Each of alternative SW is available via the personal archive file (`*.ain`) on request.

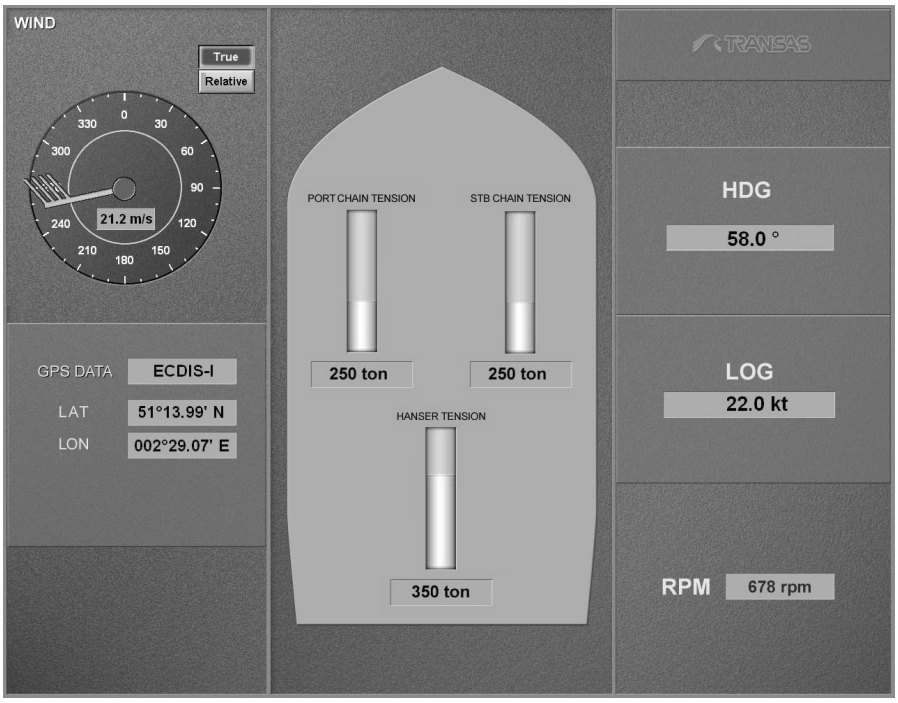
Alternative Screen View No. 1



Technical specification: Interfaces for indicators Route, ETA, TTG are to be networked with NS2400 ECDIS or NS3000 v.4.xx ECDIS-I.

Screen View resolution: 1024/768.

Alternative Screen View No. 2



Technical specification: no limitations.

Screen View resolution: 1280/1024.

Software Options

General

To expand the NC functionality with new options, it is necessary to send a request to TRANSAS representative office. The user can order any required configuration of Screen Views from Transas, development of new interfaces for the data exchange with external devices.

ATTENTION!

The price and delivery time of options depend on the complexity of developing a configuration the user requires.

Playback Functionality

The function is available through the “Playback” utility. It allows to replay the trace-files recorded during the voyage (the storage capacity considerably depends on HDD size and data processed by the NC). The replay can be started from any date/time of the recorded trace-file and with time scale up to x10.

The following interfaces are supported by “Playback” utility:

- NMEA;
- Network IPX/SPX, TCP/IP;
- Binary data from ADC modules (WAGO, TCB).

Alarm Station Functionality

Alarm Station is designed for the reception, processing and displaying of alarms and warnings from different sources via various interfaces, for the alarms and warnings acknowledgement as well as for the alarms relaying. The Alarm Station provides transferring of alarms to the Specific Locations as well as blocking of the ones in “Harbour Operations” mode.

Alarms and warning are recorded within the frame work of standard Navi-Conning 3000 functionality. In addition, it records information on the activation, acknowledgement and loss of all the alarms recorded in the Alarm Station.

In the case of installation of the appropriate license, the selection of the Alarm Station interface on the stage of software installation disables the availability of work with internal alarms (see paragraph **“Alarm” Screen View**).

The “Alarm Station” Screen View reflects the list of all selected alarms in accordance with their status. All selected alarms are sorted by groups.

There is a capability to select/deselect the monitoring of necessary alarms in the course of work of the NC 3000 application.

Data Recording System (DRS)

General

Data Recording System (DRS) functionality is built-in into the product NC 3000 v. 4.01.xx option. The purpose of functionality is:

1. The network synchronization with the NS 3100 application for the purpose of copying the following logging data:
   - Log book data;
   - Target data;
   - Radar overlay;
   - Add-info data;
   - Route data;
   - BMP screen shots;
   - Configuration of file `Nm.cfg`.
2. Audio and Video data recording.
3. Saving of the recorded data onto the recordable disc.

The following interfaces are supported by DRS:

- Network TCP/IP (for copying of the NS 3100 data);
- Audio – 4 channels (9 microphones and 3 VHFs);
- RGB/DVI or composite video.

Note: Composite signal can be recorded in case of additional Grand Video Console installation ONLY.

DRS functionality provides recording of data in the form of the sessions having pre-defined size. Recording is performed simultaneously with and independently of the NC 3000 application.

DRS Capabilities

1. Availability of configuring of the number of recorded audio channels.
2. Work with the source of RGB/DVI video signal.
3. Availability of work with two cameras (type of output signal – composite). Consecutive shifting between two sources is performed by means of the Grand Video Console converter.
4. Availability of the manual/auto selection of the source of data recorded from the NS 3100 application: Master or Backup Station. Three modes of work with the above mentioned source are implemented in the functionality:
   – Interruption of the session recording in the case of inaccessibility of the data source with the following automatic shifting to the alternate one and starting of new session recording;
   – Continuation of the session recording in the case of inaccessibility of the data source;
   – Interruption of the session recording in the case of inaccessibility of the data source.
5. Representation of the free disc space on DVD/CD and HDD (time available for recording).
6. Session management: launching, interruption, saving, deletion.

DRS Playback

Data Recording System (DRS) PlayBack Utility is intended for reproduction of Audio/Video data recorded by means of DRS Functionality simultaneously with the NS 3100 PlayBack Utility.

DRS PlayBack Utility is to be installed on the same Workstation with the NS 3100 application. The Utility performs the following functions:

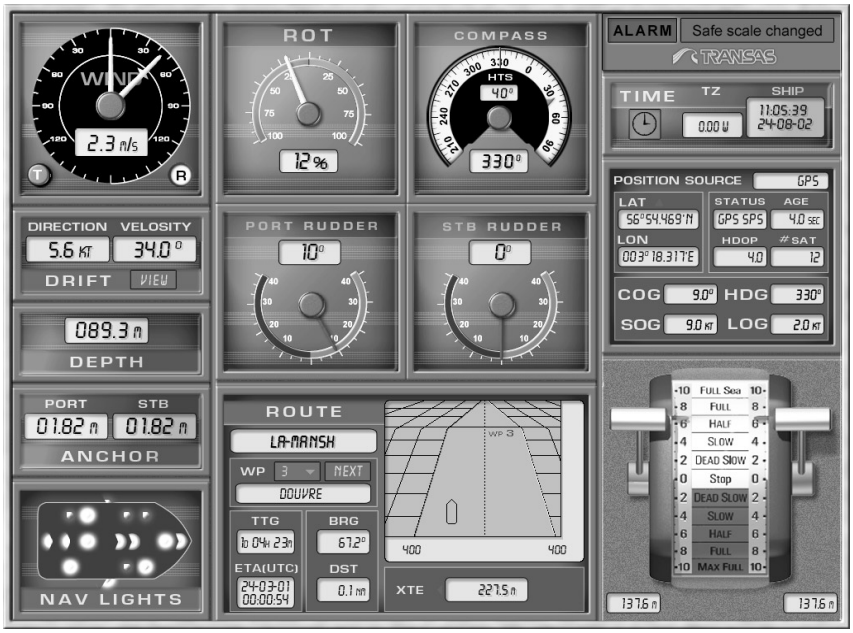
- Selection of the session previously recorded by the NC 3000 application;
- Synchronization of inner time of the applications;
- Visualization of recorded Video data;
- Reproduction of recorded Audio data.

Customization of Basic Configuration

Modelling of the required Screen Views implies the following options listed below in their complexity ascending order, or their combination.

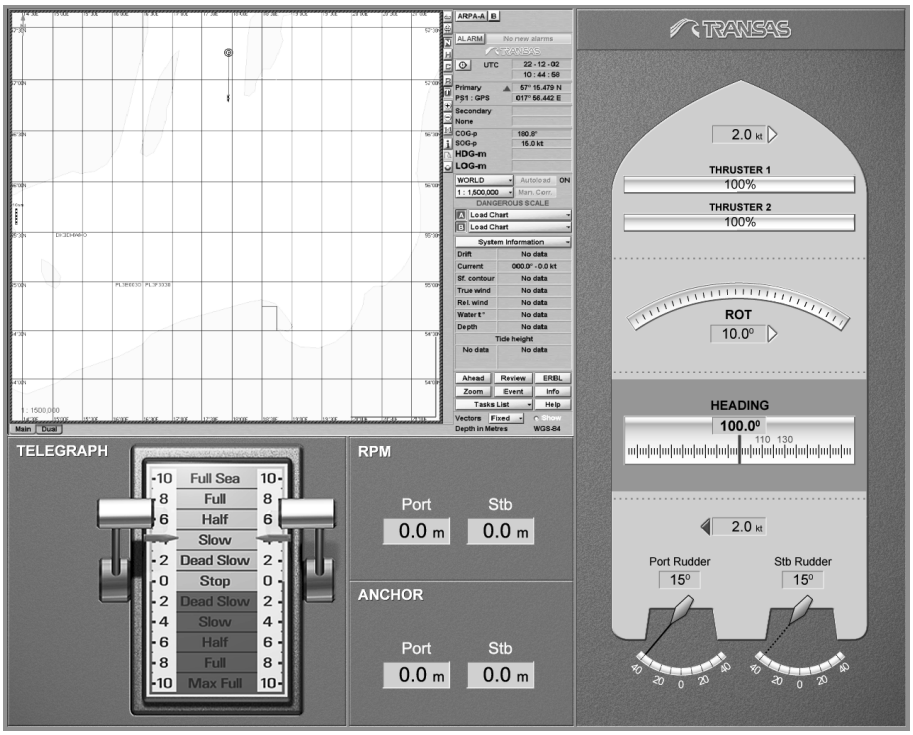
Formation of a New Screen View

Each base Screen View can be supplement with the required indicators available in another base Screen View, whereas unnecessary indicators can be removed. The parameter indicators can be re-arranged within the base Screen View.
If there is a significant change in the set of parameter displayed in a Screen View, it is possible to create a new Screen View to the user specification.



Order for a Screen View with the Joint Operation of the NC and NS

For a new Screen View, you can order an option which combines operation of the NC and NS on a single screen. This NC Screen View implemented on a resolution of 1600x1200 or 1280x1024, allows the display of the NS in the top left corner.
In this case, the NS resolution should be 1024x760 or 800x600 respectively. Control of applications will be exercised by using standard OS facilities, with switching made by pressing <Alt>+<Tab> key combination or with the free cursor.



Development of New Parameter Indicators

The user can order development of parameter indicators not included in the set of indicators provided on the base Screen Views.

Development of New Interfaces

With the use of external devices which have interfaces not supported by the NC program, it is possible to order the development of any proprietary binary and other interfaces for the NC. Parameters received from these external devices can be displayed by using a set of indicators included in the base Screen Views.

In addition, built into the NC can be the processing of original parameters received from the external devices with the use of mathematical formulae provided by the user, and the display of results on the Screen View.

HARDWARE TECHNICAL SPECIFICATION

Navi-Conning Carton

General

Navi-Conning Carton consisting of:

- 1 x Set of Navi-Conning Manuals;
- 1 x Dongle;
- 1 x License;
- 1 x Transas Marine Navigation Systems latest issue CD.

Set of Navi-Conning Manuals

The set of basic documentation for the NC 3000 consists of the following manuals:

- Navi-Conning 3000 (version 4.01.00). Installation Guide;
- Navi-Conning 3000 (version 4.01.00). User Manual.

Protection Key (Dongle)

Dongle is a NC protection key. A protection key is a special device that determines the right of authorized use of Transas Ltd navigation systems.

The dongle is designed to be “transparent” for the data transfer onto the printer and does not interfere with computer’s operation in the ordinary modes. Dongle should be all the time connected to the computer when navigation system operates.

Dongle installation and its activation is described in **Chapter 2**.

NC systems operates with Rainbow Sentinel SuperPro dongles (LPT or USB) only.

Picture below presents dongles variants now in use.

License

License is a floppy disk, which contains license files for protection of NC system, and text files for description of license and delivery set:

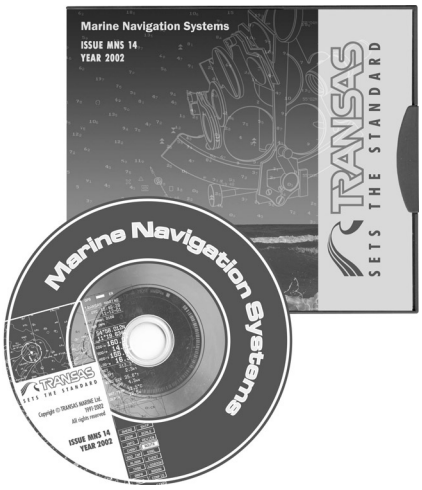
- `SETUP.ID`;
- `LICENSE.DAT`;
- `LICENSE.TXT`;
- `PACKING.TXT`.

ATTENTION!

For the NC operation in the network configuration with NS, the network operation option should be permitted by the NS license.

Marine Navigation Systems CD

This CD is a program compact disk named “Marine Navigation Systems” and associated with year of manufacturing and number of issue.



Standard compact disk “Marine Navigation Systems” consist of the following software by the Transas Ltd:

- Navi-Sailor 3000 ECDIS-I;
- Navi-Sailor ECS-I;
- Navi-Sailor 3100;
- Navi-Sailor 3000 ECDIS;
- Navi-Sailor 3000 ECS;
- Navi-Fisher 3000 System 15;
- Navi-Conning 3000;

} latest versions of navigation systems

- Chart Catalogue – the product that was designed for the preparation of orders for the purchase of TX-97 format charts from Transas Ltd.;
- Weather Wizard – the product intended for ordering, reception and visualization weather forecasts for any region of the globe. Detailed information on this product is available at Transas Ltd. web site (http://www.transas.com) or from company’s dealers;
- Radar Processor drivers – latest version of Radar Integrator Board drivers;
- Transas Integrator application – the software that designed for automatic running of Navigation Systems, its applications and utilities, and for limitation access to the files not related to the Navigation Systems software;
- “First Aid” utility – can perform the following functions:
  - To offer recommendations on the elimination of typical faults which occur in operating the navigation system;
  - To check OS settings which are required to be made for the correct navigation system operation;
  - To draw a troubleshooting report to be sent to the company for the following servicing.
- Sentinel Dongle test program – TDCHK utility for checking the “Rainbow Sentinel SuperPro” type dongle’s operability. Upon starting, the utility collects and displays dongle information; should the dongle prove defective, the corresponding notification is issued;
- Track Converter – designed for manual conversion of trajectory files created by the older versions of Navi-Sailor/Navi-Fisher (including NS1100F) into NS software compatible format. On the CD the converter comes along with the brief note on its usage (`TrkCvt.txt`).

Conning Box

General

Conning Box (CB) is a device consisting of a number of ADC's, which allows analog-to-digital conversion of signals.

Digital information is passed from the CB in accordance with a binary format developed by manufacturer.

The NC is operating with ADC supporting the following principles:

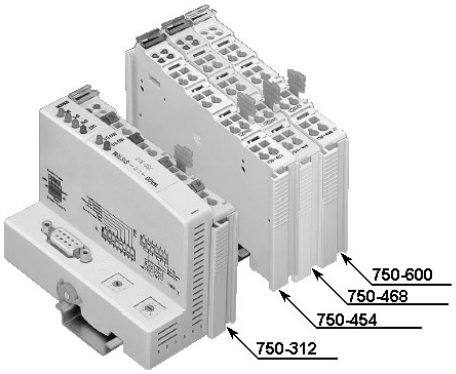
- ADC output signal varies according to the linear law proportionally to the change of the input signal with the accuracy provided by the ADC;
- ADC operates within the set range only. Even if the input signal goes beyond the range limits, the ADC will be taken as the maximum range value;
- Physical value digitized by the ADC requires calibration.

WAGO CB

NC supports the following ADC by the German company WAGO:

- 750-314 "Main Module" – main unit, which automatically configures, creating a local process image;
- 750-600 "End Module" – final module is the last one in the set of modules;
- 750-403 "Digital Input Module" – converts the signal from analog to digital form, 3/+5 V corresponds to "0", 15/30 V corresponds to "1";
- 750-476 "2 Channel analog Input Module (-10/10 V)" – converts the signal from analog to digital form within -10/+10 V range;
- 750-513 "Digital Output Module" – switches external system contacts by digital input;
- 750-454 "2 Channel analog Input Module (4-20 mA)" – converts the signal from analog to digital form within 4-20 mA range;
- 750-468 "4 Channel analog Input Module (0-10 V) – converts the signal from analog to digital form within 0/+10 V range.

With the use of WAGO CB, the order in which modules are arranged on the DIN rail is essential. It is the final module (750-600) which always comes last. With a change of module arrangement on the rail, the configuration should be readjusted (see **Annex A** paragraph **Adjustment of NC Operation with WAGO Conning Box**).



Transas Ltd. CB

Transas CB Units

Conning Box by Transas Ltd. may contain the following units:

- “Interface main unit and power supply” are the main unit containing the processor and interfaces (RS232 and RS422) and power supply unit designed for converting the alternating voltage of 85V to 264V range to DC 24 V.

ATTENTION!

In case of CB configuration consisting of more than 9 ADC units, it is necessary to order the second set of Conning interface main unit and power supply.

- “8-Channel Analogue Input Unit -10/+10V” converts signals from analog to digital form within -10 to +10 V range with 12 digit partition accuracy (4096 grades), conversion time is not more than 10 ms;
- “8-Channel Analogue Input Unit 4-20mA” converts signals from analog to digital form within 4-20 mA range with 10 digit partition accuracy (1024 grades), conversion time is not more than 10 ms.

ATTENTION!

There are two modifications of 8-Channel Analog Input Unit 4-20mA:

- with 180 Ohm input impedance (for voltage in the current loop more then 12 V);
- with 18 Ohm input impedance (for voltage in the current loop less then 12 V).

- “4-Channel (Isolated) Analogue Input Unit -10/+10V” converts signals from analog to digital form within -10 to +10 V range with 12 digit partition accuracy (4096 grades), conversion time is not more than 100 ms;
- “4-Channel (Isolated) Analogue Input Unit 4-20mA” converts signals from analog to digital form within 4-20 mA range with 10 digit partition accuracy (1024 grades), conversion time is not more than 100 ms.

ATTENTION!

There are two modifications of 4-Channel (Isolated) Analog Input Unit 4-20mA:

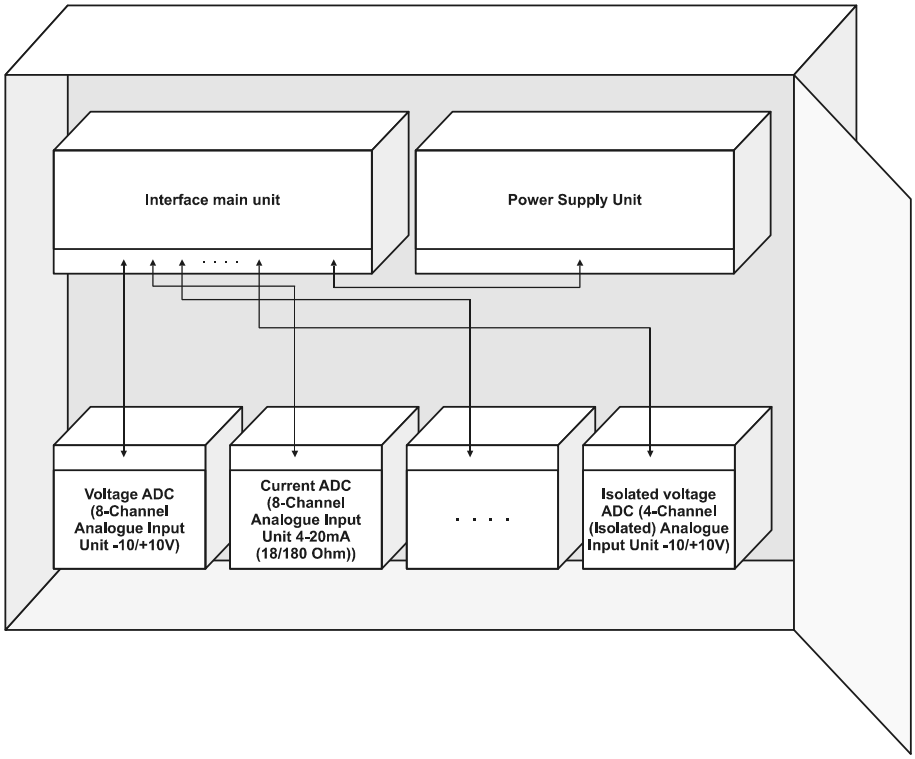
- with 180 Ohm input impedance (for voltage in the current loop more then 12 V);
- with 18 Ohm input impedance (for voltage in the current loop less then 12 V).

- “16-Channel Discrete Input Unit” – 0-5 V corresponds to “0”, 8-24 V corresponds to “1”;
- 16-Channel Discrete Output Unit Low Side – unit for the transmission of discrete signals to the devices with common ground;
- 16-Channel Discrete Output Unit High Side – unit for the transmission of discrete signals to the devices with the common potential of +24V.

Conning Interface Housing Box with Mounting Kit

Depending on ordered quantity of the Transas CB units the following two types of Housing Boxes can be delivered:

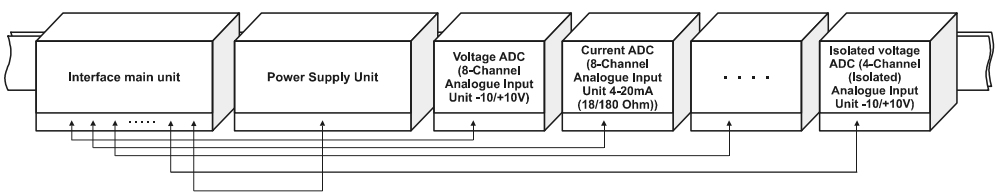
- By the German company Rittal Rudolf Loh Gmbh, type:
  AE 1380 – 380x380x210 IP 66;


Interface main unit
Power Supply Unit
Voltage ADC (8-Channel Analogue Input Unit -10/+10V)
Current ADC (8-Channel Analogue Input Unit 4-20mA (18/180 Ohm))
Isolated voltage ADC (4-Channel (Isolated) Analogue Input Unit -10/+10V)

- By Italian company ETA S.P.A. dimensions 200 X 300 X 150, Articolo ST2-315, LR 78156 E-154776, TYPE 4/12 IP66.

If Housing Box option has not been ordered, CB units are delivered on the carrier rail:

- Mounting DIN Rail isType TS35 X 7,5 Standard – Din EN 50022.


Interface main unit
Power Supply Unit
Voltage ADC (8-Channel Analogue Input Unit -10/+10V)
Current ADC (8-Channel Analogue Input Unit 4-20mA (18/180 Ohm))
Isolated voltage ADC (4-Channel (Isolated) Analogue Input Unit -10/+10V)

Computers

General

The main hardware part of NC systems is the TRANSAS RS3/RS4 marine industrial computer produced for TRANSAS by CAPAX.

RS3 Basic

Transas RS3 Basic computer consists of the below mentioned components:

- ER-2B08P – 19”1/2 width chassi, 6U;
- BPCI-PBP-08P4-B – Backplane 8slot 4PCI+1CPU+3ISA;
- PS-330A – Powersupply PS/2, 330W Autoswitching;
- CPCI-ROBO658W – CPU Card PIII/Cel w.VGA;
- CPU-IPIII800FCPGA – Intel PIII 800MHz, 256k FCPGA;
- CPU-FAN-CM25 – Fan for PIII/Cel. >1GHz h30mm;
- RAMD-S128-133 – SDRAM DIMM 128Mb;
- FDD-35-144-BL – Floppy 3.5” 1.44 MB;
- HDI3-SAM2042 – Samsung 20,4 GB, 5400rpm HDD;
- CDI-TEAC40B – CD-ROM TEAC 540E 40X, IDE;
- Intel 810E Chipset – 4 MB Graphic Card;
- 16C550C UARTs – 2 x COM Ports.

RS3 EC

RS3 EC type complied to IEC60945.

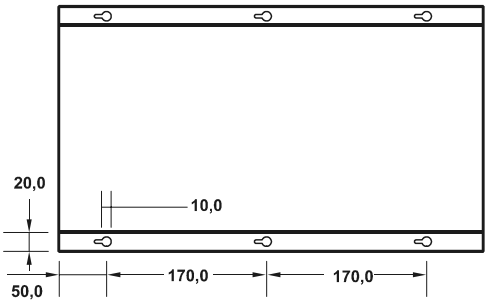
Transas RS3 EC computer consists of the below mentioned components:

- ER-2B08P – 19”1/2 width chassi, 6U;
- BPCI-PBP-08P4-B – Backplane 8slot 4PCI+1CPU+3ISA;
- PS-330A – Powersupply PS/2, 330W Autoswitching;
- CPCI-ROBO658W – CPU Card PIII/Cel w.VGA;
- CPU-IPIII800FCPGA – Intel PIII 800MHz, 256k FCPGA;
- CPU-FAN-CM25 – Fan for PIII/Cel. >1GHz h30mm;
- RAMD-S128-133 – SDRAM DIMM 128Mb;
- FDD-35-144-BL – Floppy 3.5” 1.44 MB;
- HDI3-SAM2042 – Samsung 20,4 GB, 5400rpm HDD;
- CDI-TEAC40B – CD-ROM TEAC 540E 40X, IDE;
- GAP-ATIXP8 – ATI Xpert 98 Pro, Rage XL 8MB;
- NAP-3C905TXOEM – 3COM PCI 100Mbit, 3C905 Rev. C;
- SB-128PCI – Creative Soundblaster 128 PCI;
- COM-2168HS – 8x RS-232/RS-422 16C550C UARTs.

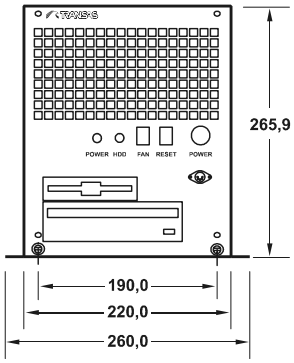
RS3 Dimensions

Overall and mounting dimensions of RS3 computer are provided in the drawing below:

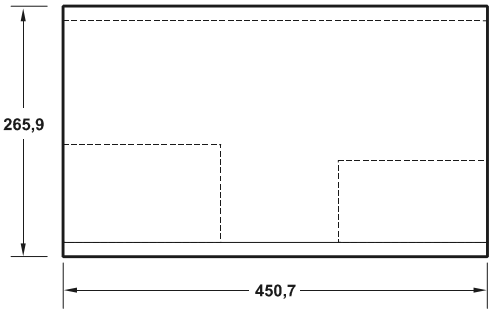
TOP VIEW



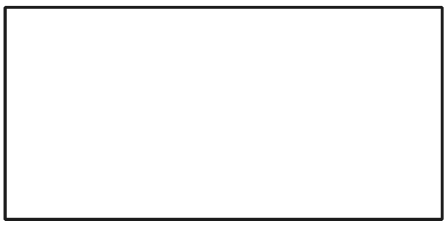
FRONT VIEW



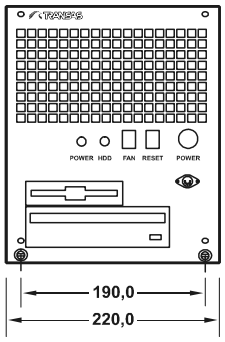
SIDE VIEW



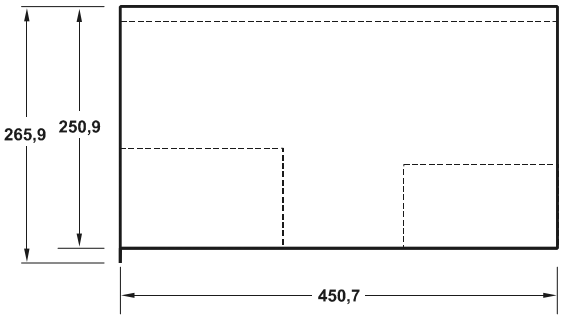
TOP VIEW



FRONT VIEW



SIDE VIEW



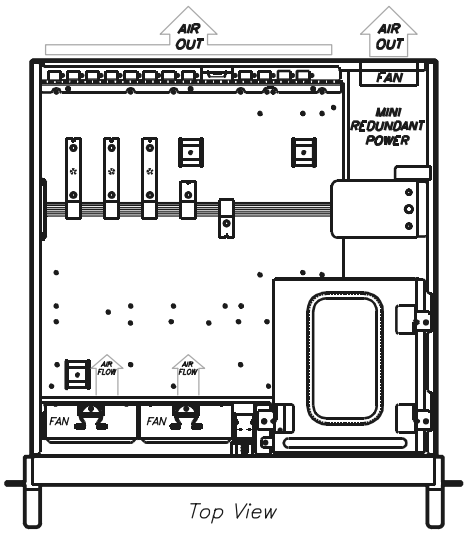
RS4 Basic

Transas RS4 Basic computer consists of the below mentioned components:

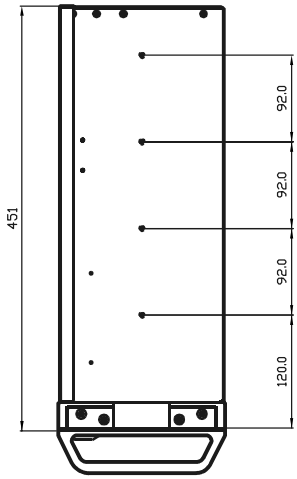
- RS4 Housing:
  - ER-2402ATX-3 – 19”, 4U for ATX MB;
  - Cooling units: 2x9 cm ball bearing fans;
  - Drive bays: 3 x 5.25”, 1 x 3.5” FDD;
  - Expansion slots: 6 x PCI-slots, 1 x AGP;
  - Indicators: LED for power and HDD activity;
  - Buttons: “power on/off”, system reset;
  - Dimensions: 480 x 177 x 451 mm (W x H x D);
  - Power supply 300 W 240 VAC.
- MB-INTELD865GBFL – Intel Mb, P4 w VGA Extreme2/LAN;
- CPU-IP4-2400/800, Intel Pentium 4 2400 GHz, 800 MHz FSB, 512 kB;
- CPU-FAN-P4-253 – Fan for Socket 478, > 2,53 Ghz;
- RAM-DDR-256-2700 – DDR RAM 256Mb PC 2700, 333 MHz;
- HDI3-WD360GD – Western Digital 36 GB 10 K SATA HDD;
- FDD-35-144-BL – Floppy 3,5” 1,44MB – Black;
- Samsung CD-R/RW 52/32/52 IDE Black;
- COM-2xRS232PCI – PCI 2xRS232, 32 bytes FIFOMount sys – System assembly, function test.

RS4 Dimensions

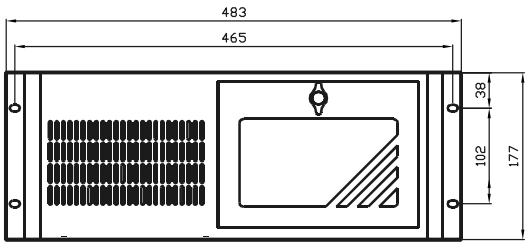
Overall and mounting dimensions of RS4 computer are provided in the drawing below:



Top View



Right–side View



Front out–side view

Optional Components

Moxa Board

To connect the sensors RS4 computers are supplied with the CP114I 4-port supports three serial interfaces in one PCI board (ports 1and 2 for RS-232 or RS-422/485, selectable by jumpers; ports 3 and 4 for RS-422/485).

The board is supplied with configuration utility, `IO-IRQ.EXE`, which allows to configure the ports I/O address, IRQ, normal or high-speed spectrum (Navi-Sailor/Navi-Conning products uses normal speed spectrum).

Windows NT driver installation is described in `README` file of software supplied together with the board.

Transas Dedicated Keyboard ES4

Functional Description

The Trackball-Keyboard consists of two keyboard fields (QUERTY, function and DIM-keys) and a separate Trackball:

1. Keyboard.

   All key are backlit with yellow LEDs (Light Emitting Diodes). The QUERTY-field is printed with a „hiding-effect", i.e. the key legends are normally invisible when not lit. The QUERTY-field normally is not lit. When a key is pressed the backlight is switched on and the first key press is not sent to the PC. When the light is dimmed down to the lowest level, the QUERTY-field will be lit with full brightness (daylight operation). Above this level the brightness of both fields are equal. When no key of the QUERTY-field is pressed for more than 30 seconds the backlight of will be switched off. With the keys "Dimmer +" and "Dimmer -" the brightness can be adjusted in 255 steps.

   The keyboard has a standard PS/2 Interface to the PC. On the back of the keyboard is a PS/2-plug, which accepts a standard PS/2 compatible keyboard. Key codes from this keyboard will be forwarded transparently to the PC.

   The QUERTY-field produces standard key codes according to the imprinted legend. The coding is for an US-keyboard. Some key have a second code imprinted on their upper half.

2. Trackball.

   The Trackball works as a standard PS/2-mouse with two buttons. In release 2 of the keyboard, the buttons of the trackball can be backlit, too. When connected with the plug on the back of keyboard the light will be dimmed together with the keyboard.

3. Loudspeaker.

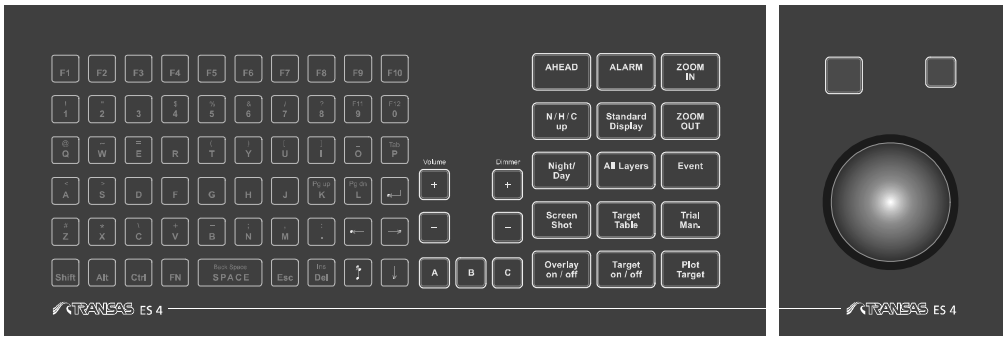
   The keyboard has an integrated loudspeaker and an audio-amplifier with an output power of approximately 1W. With the "Volume +/-" keys the loudness can be adjusted between approximately 75 … 85 db, assuming an input signal of 1Vss.

4. Power supply.

   Keyboard and trackball are supplied from PS/2 interface. The supply voltage should be 5V-DC +/-10%.

   The backlight and the audio amplifier are supplied with 12V-DC from an AC PSU with an input range of 85 … 260 V-AC.

Keyboard Legend



Technical Data

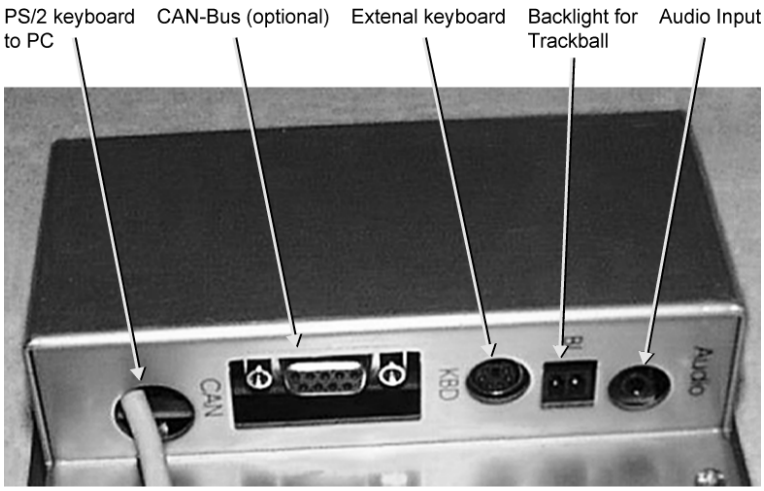
Dimensions:

- Keyboard alone: 350 * 150 * 63 mm (W x H x D);
- Trackball alone: 100 * 150 * 60 mm (W x H x D);
- Keyboard with trackball: 450 * 150 * 63 mm (W x H x D).

Power supply:

- Keyboard electronics: 5V-DC +/- 10%, approximately 60 mA;
- Trackball electronics: 5V-DC +/- 10%, approximately 30mA;
- Backlight + Audio: 12V-DC +/- 10%, approximately 1.2A;
- PSU for 12V: 85..260V-AC 50..60Hz, approximately 20W.

Rear Panel



Interfaces:

- PS/2 for keyboard, cable with PS/2 connector, length 3m;
- PS/2 for trackball, cable with PS/2 connector, length 3m;
- PS/2 plug for external keyboard;
- Connector for trackball backlight (12V PWM);
- Audio input, 1Vss;
- Optional CAN-bus for connecting other input devices, not supported in current software.

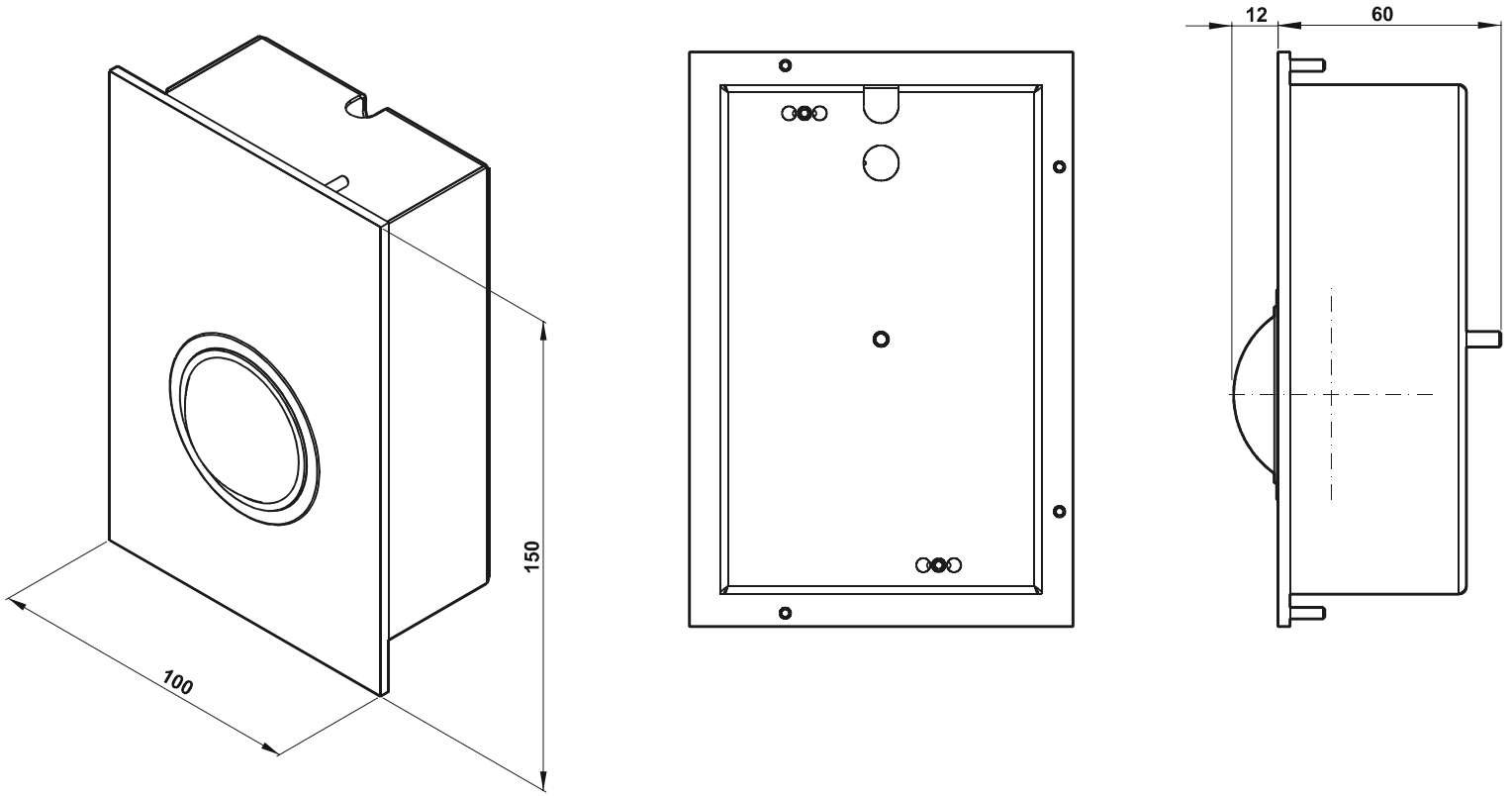


Fig. 1. Transas ES4 dedicated keyboard. Dimensional drawing of Trackball

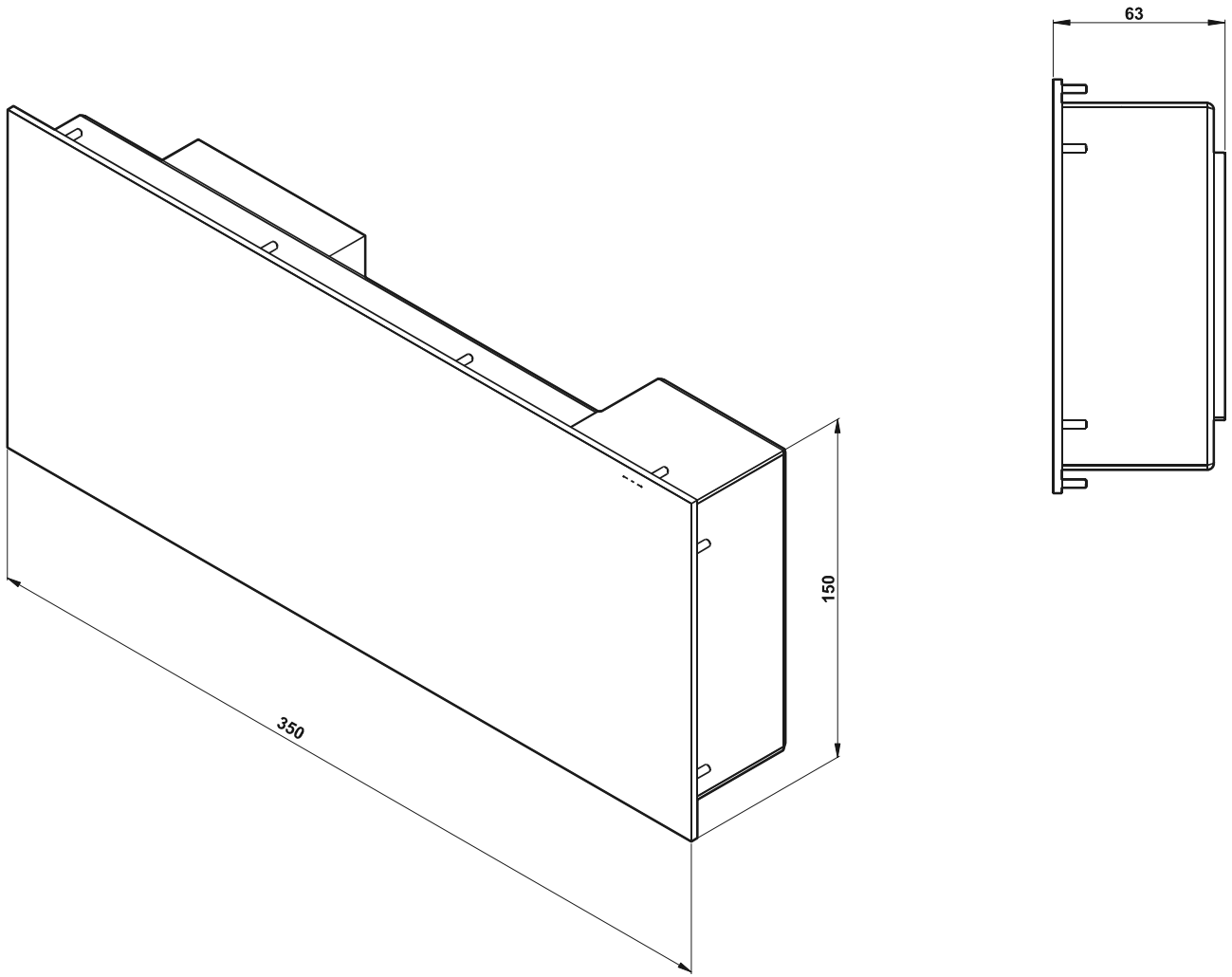


Fig. 2. Transas ES4 dedicated keyboard. Dimensional drawing of Keyboard

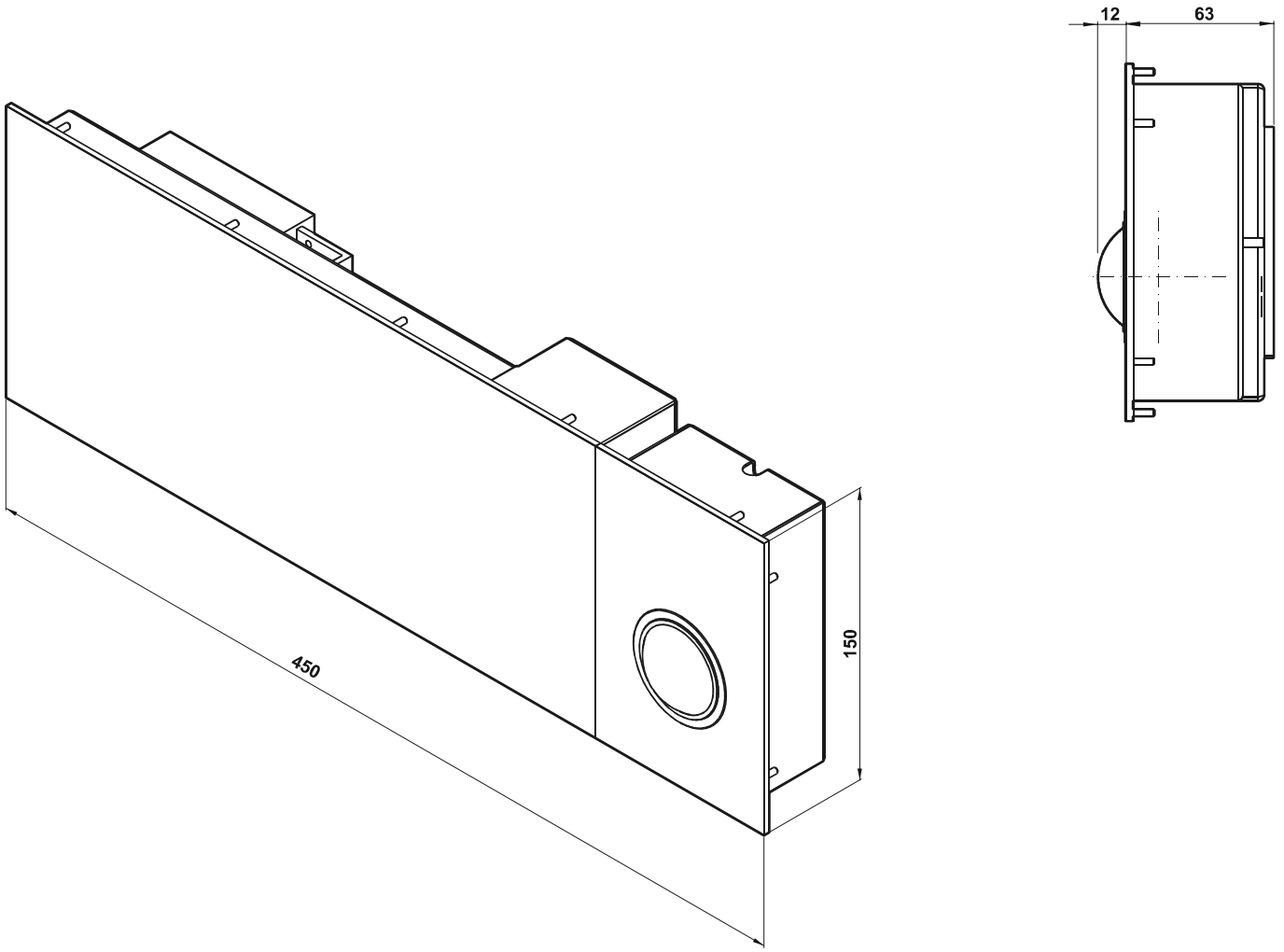


Fig. 3. Transas ES4 dedicated keyboard. Dimensional drawing of combined Keyboard and Trackball

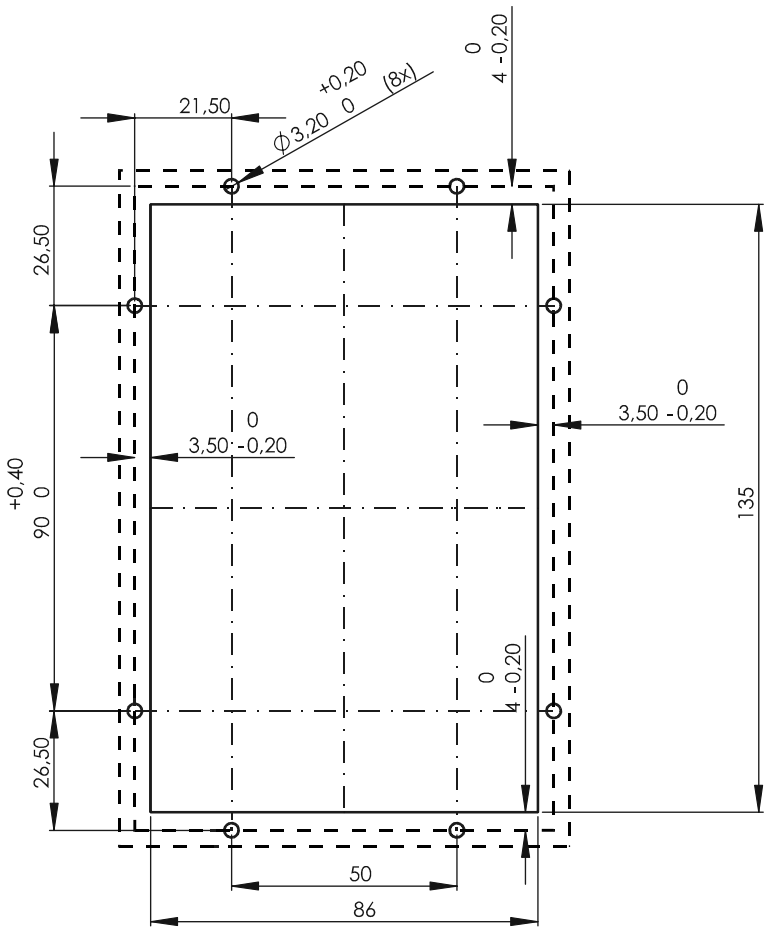


Fig. 4. Transas ES4 dedicated keyboard. Trackball mounting hole

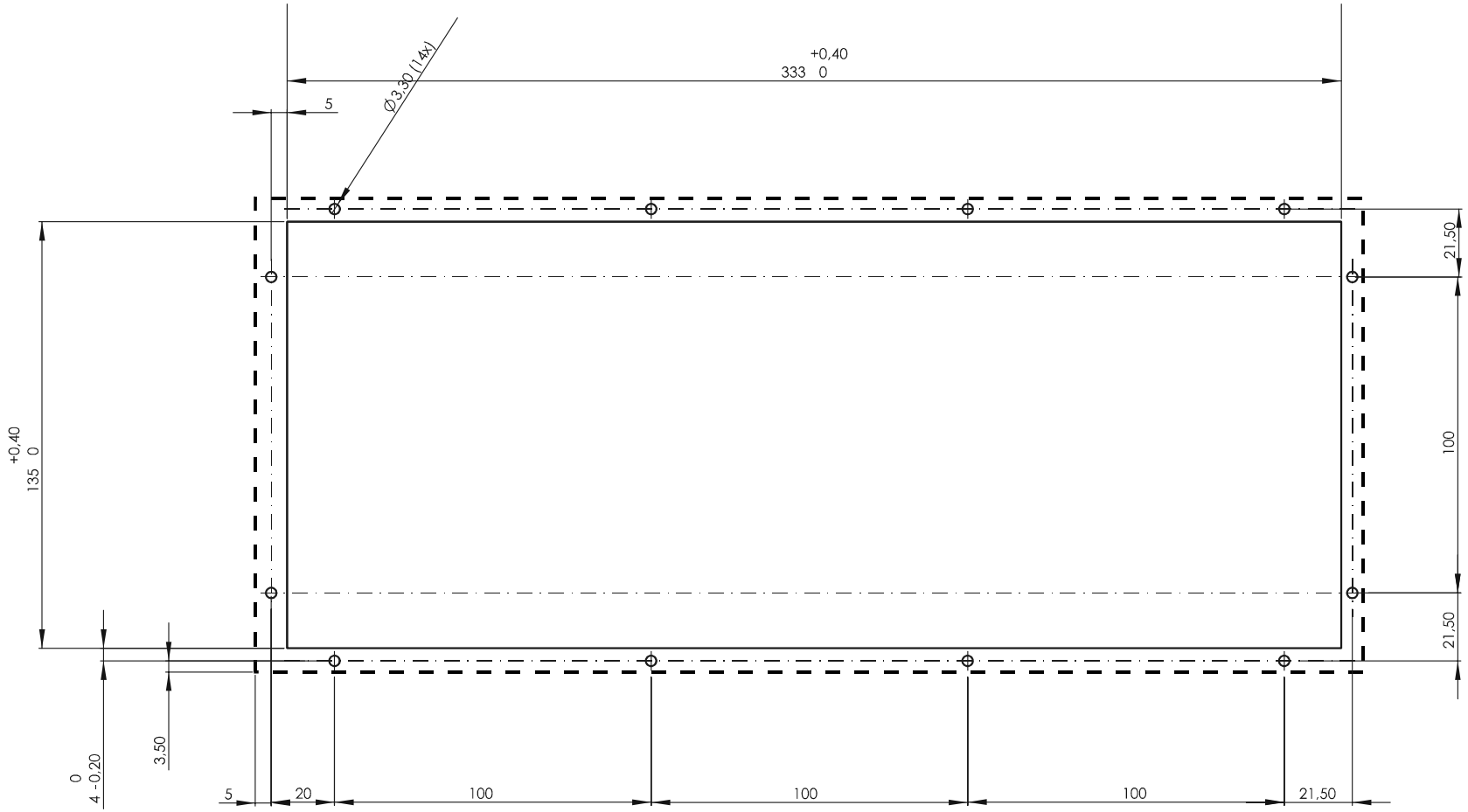


Fig. 5. Transas ES4 dedicated keyboard. Keyboard mounting hole

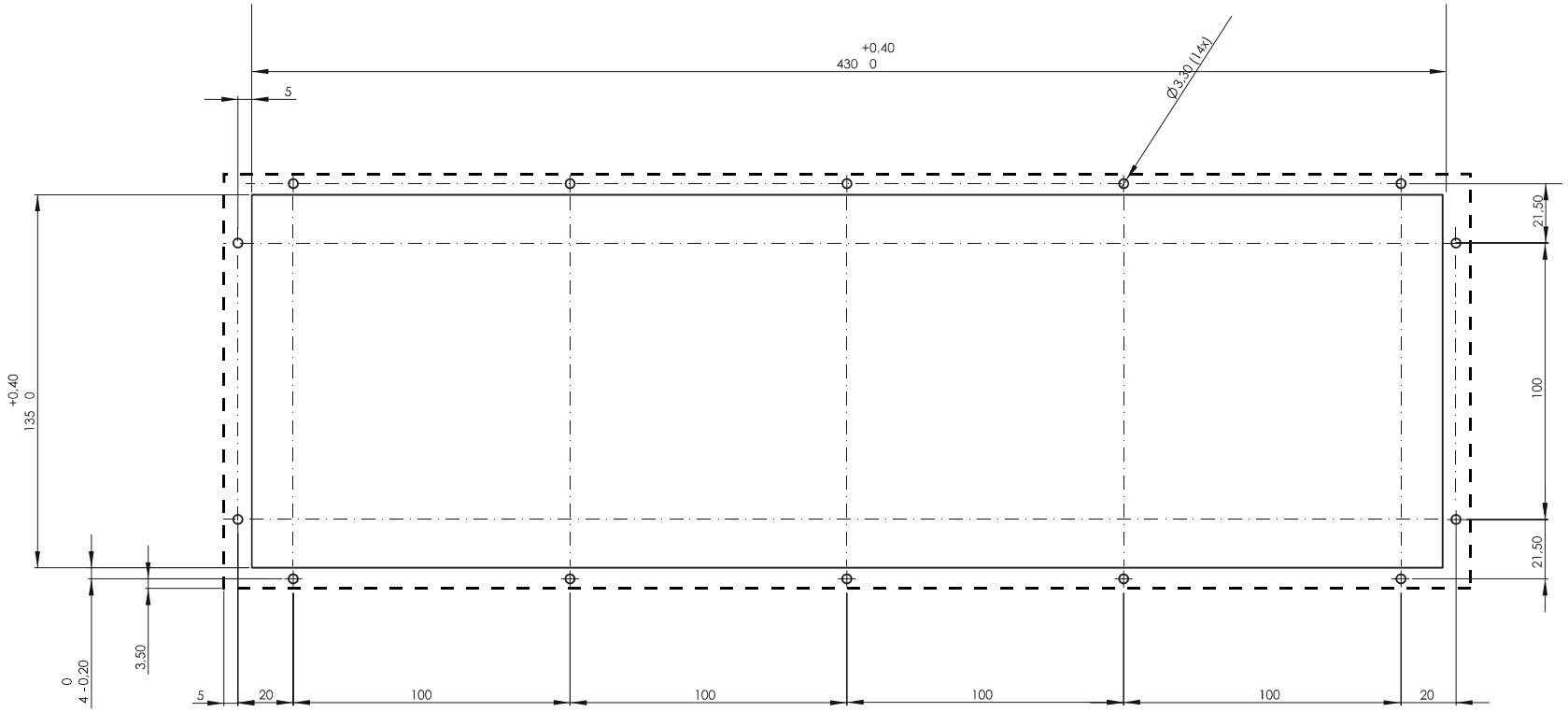


Fig. 6. Transas ES4 dedicated keyboard. Combined Keyboard and Trackball mounting hole

Transas Monitors

General

As a dedicated part of NC Transas Marine Ltd uses Industrial Colour Monitors manufactured for Transas by Jakob Hatteland Display AS. The following types of monitors are used:

- 19” TFT Hatteland JH 19 T04 MMD E1;
- 20” TFT Hatteland JH 20 T04 MMD E1;
- 23” TFT Hatteland JH 23 T02 MMD E1.

Features

These color displays are an industrialized versions of a high quality Fujitsu TFT based display with MVA Premium technology. The MMD allows you to display professional applications with clarity and enhanced color and image quality, VGA std input, Video input and PiP (Picture in Picture) functions. The display provides you with automatic compatibility with multiple upgrading platforms and a vast array of graphic standards allowing resolution upgrades without upgrading the display.

The controller and the high light intensity in combination with the high contrast and wide backlight adjustment control, allow the product to be used in many environments. The brightness is adjustable from 0 to 1000%.

Product Specifications

	19” TFT Hatteland JH 19 T01 MMD E1	**20” TFT Hatteland JH 20 T04 MMD E1**	**23” TFT Hatteland JH 23 T02 MMD E1**
Technical description			
TFT Technology	19.0 inch viewable image size Active Matrix Thin Film Transistor (TFT) MVA Premium technology	20.1 inch viewable image size Active Matrix Thin Film Transistor (TFT) MVA Premium technology	23.1 inch viewable image size Thin Film Transistor (TFT) MVA Premium technology
TFT characteristics			
Pixel number	1280x1024		1600x1200
Pixel pitch (RGB)	0.294 (H) x 0.294 (V) mm	0.255 (H) x 0.255 (V) mm	0.294 (H) x 0.294 (V) mm
Response Time	15 ms (typical), “black” to “white”	15 ms (typical), “black” to “white”	20 ms (typical), “black” to “white”
Contrast Ratio	600:1 (typical)		
Light Intensity	250 cd/m2 (typical)		
Viewable Angle	+/- 80 deg. (typical) (Up/Down/Left/Right)		+/- 85 deg. (typical) (Up/Down/Left/Right)
Active Display Area	376.32 (H) x 302.056 (V) mm	408.0 (H) x 306.0 (V) mm	470.4 (H) x 352.8 (V) mm
Max Colors	262.144 (depending on graphic card)		16.777.26 (depending on graphic card)
Video Signal	Analog RGB 0,7Vp-p. Input Impedance 75 Ohm		
Synchronization			
Sync Signal	• Digital separate synchronization; • Composite synchronization; • Synchronization on green; • Auto detect VGA -> SXGA, interlaced and non interlaced		

	19" TFT Hatteland JH 19 T01 MMD E1	**20" TFT Hatteland JH 20 T04 MMD E1**	**23" TFT Hatteland JH 23 T02 MMD E1**
Synchronization Range			
• Horizontal	31,5 kHz to 91,1 kHz		31,5 kHz to 106,259 kHz
• Vertical	60 Hz to 85 Hz		
Supported Signal Inputs			
Resolutions:			
VGA	640 x 480 (including 640 x 350)		
SVGA	800 x 600 (including 720 x 400)		
XGA	1024 x 768		
SXGA	1280 x 1024		
UXGA			1600 x 1200
Video Signals:	• Interlaced NTSC and PAL/SECAM video; • Composite video; • S-Video; • Component video (YCrCb)		
Power Specifications			
Power supply option	115VAC/60Hz & 230VAC/50Hz		
Power Consumption	Operating: 40 W (max)		Operating: 100 W (max)
MECHANICAL DESCRIPTION			
Physical Dimensions	483 (W) 444 (H) 68 (D)	534 (W) 481 (H) 73 (D)	584 (W) 534 (H) 72 (D)
Weight	14 kg (approx w/bracket)	15 kg (approx w/bracket)	17 kg (approx w/bracket)
Input Signal Terminal			
RGB (PC) signal	15pin mini D-SUB (female)		
Composite Video	RCA Phono plug		
S-Video signal	S-Video (SVHS) plug		
AC power signal	Std IEC Inlet		
Accessories			
Touchscreen	1 x D-SUB 9P Connector (female)		
Remote Control	2 x D-SUB 9P Connector (female)		
User Controls			
On front bezel	• "Power On/Off" (push button); • Brightness control; • 2 x hotkeys; • Mode status LED		
Behind hatch	On Screen Display control (OSD/OSM)		
Environmental Considerations			
Operating	Temperature –15deg. C to +55 deg. C. Humidity 30% to 90 % (non condensing)		
Storage	Temperature –20 deg. C to +60 deg. C. Humidity 10% to 90% (non condensing)		
Safety Considerations	Even although the test conditions for bridge units provide for a maximum operating temperature of 55º C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25º C. This is a necessary prerequisite for a long life and low service costs		

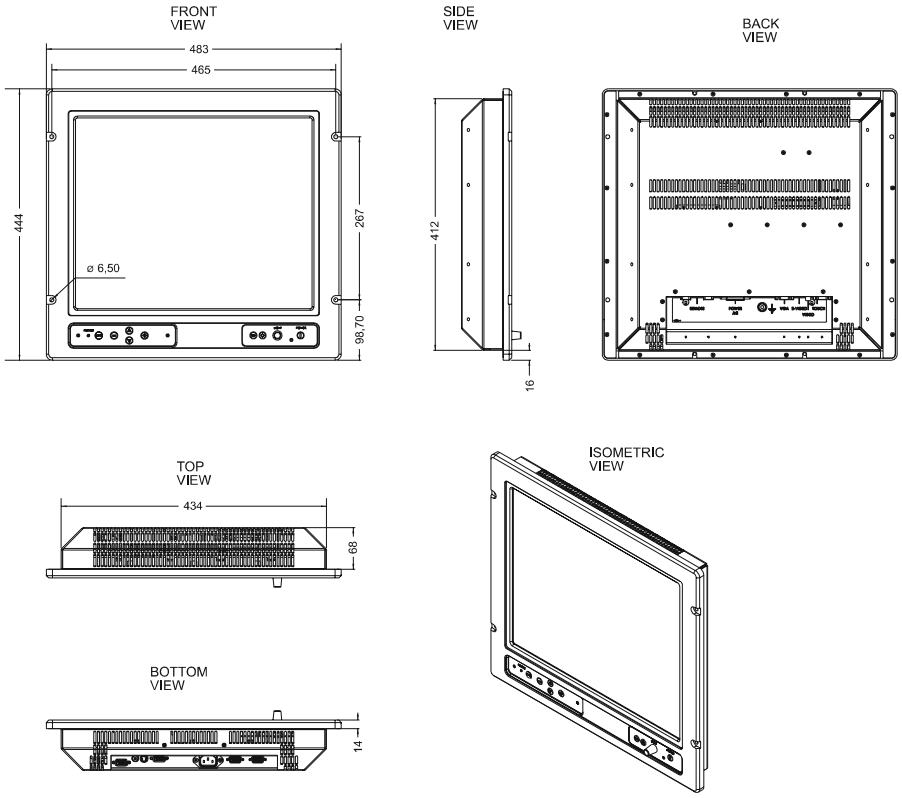


Fig. 7. 19" TFT Hatteland JH 19 T04 MMD. Standard View

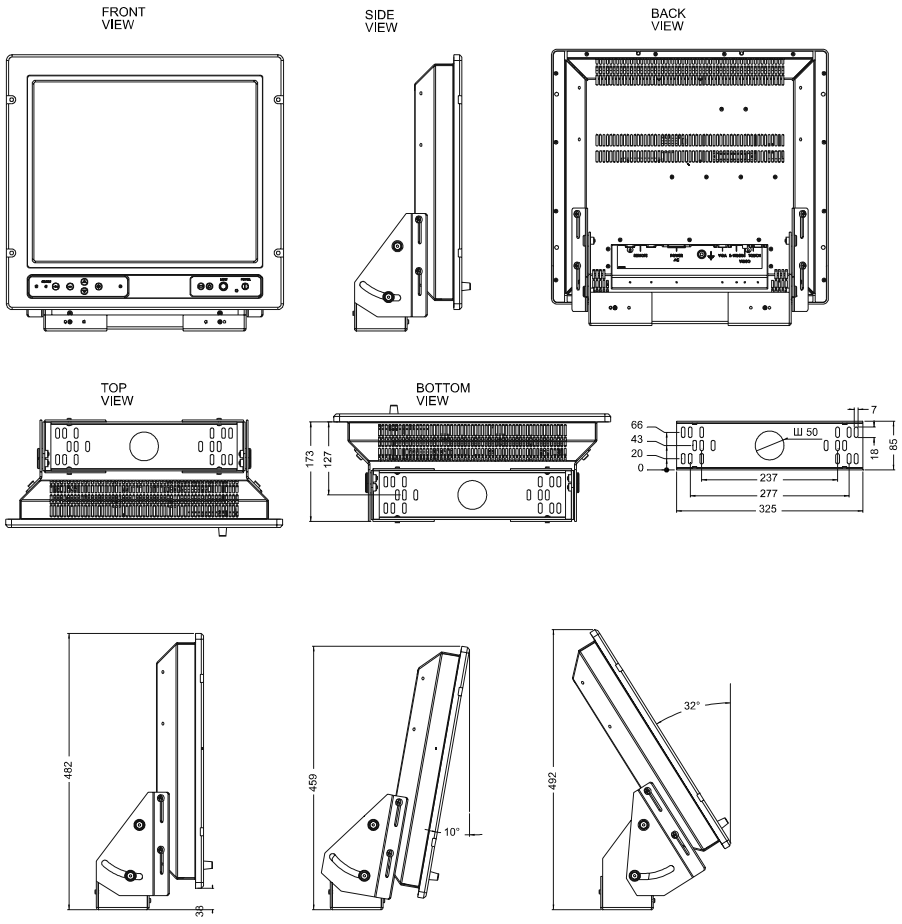


Fig. 8. 19" TFT Hatteland JH 19 T04 MMD. Bracket View

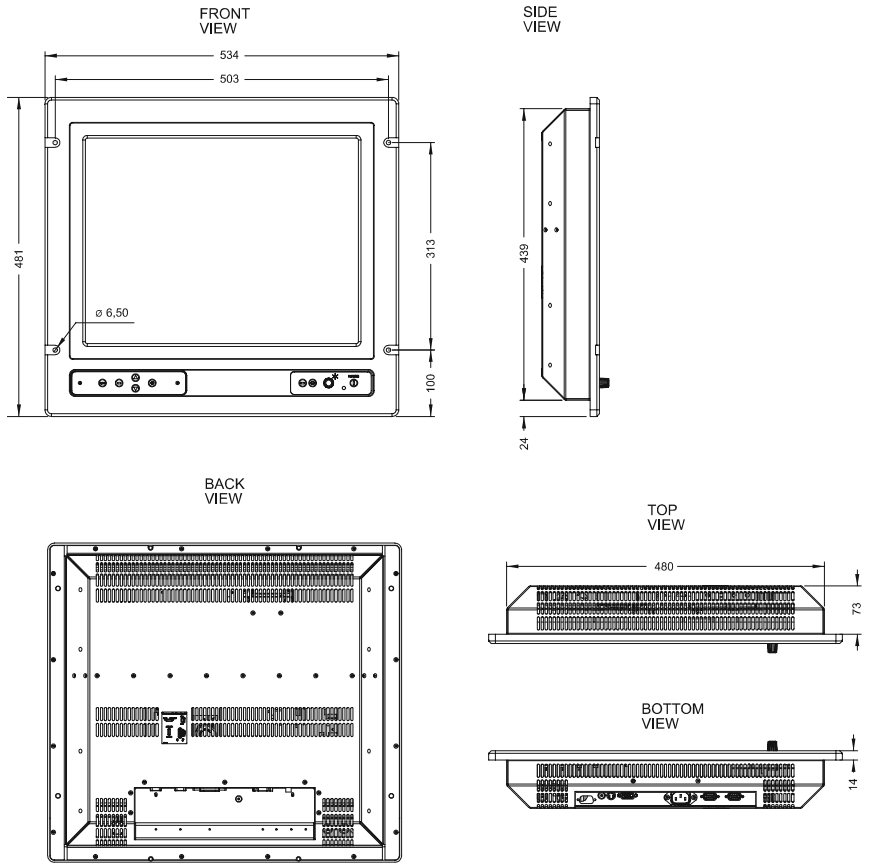


Fig. 9. 20" TFT Hatteland JH 20 T04 MMD. Standard View

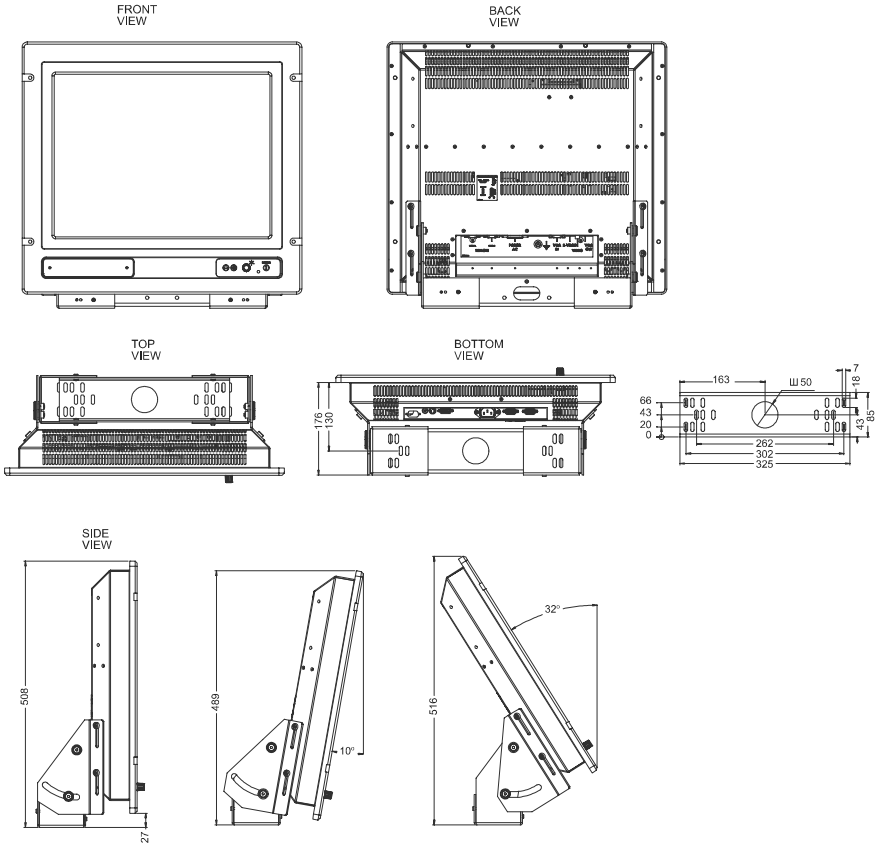


Fig. 10. 20" TFT Hatteland JH 20 T04 MMD. Bracket View

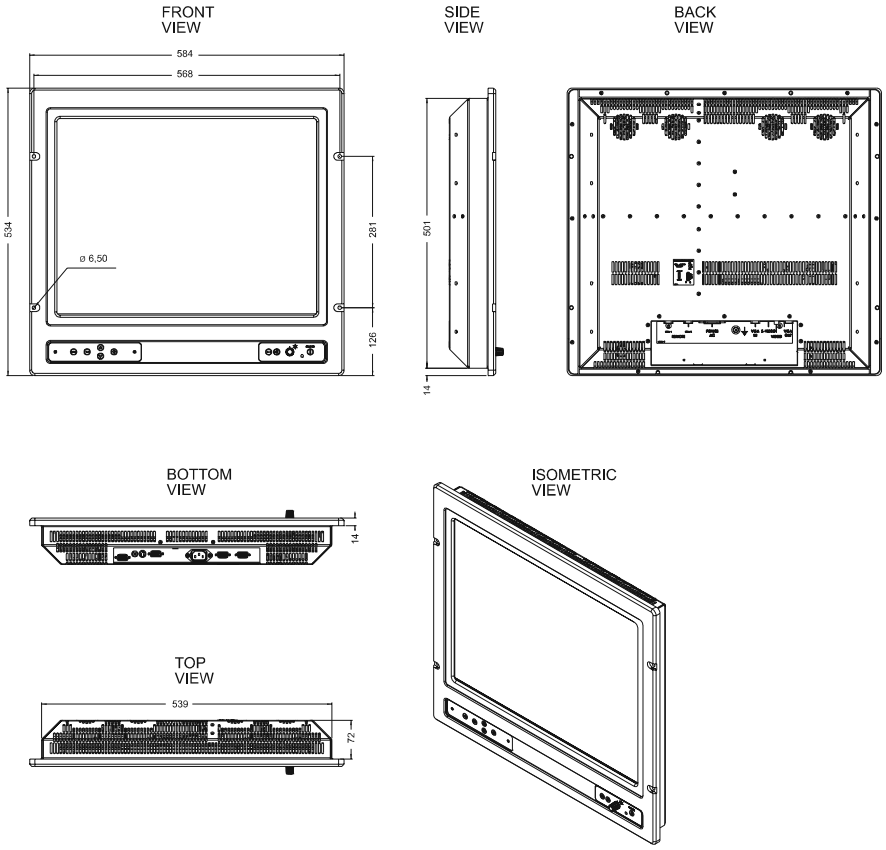


Fig. 11. 23" TFT Hatteland JH 23 T02 MMD. Standard View

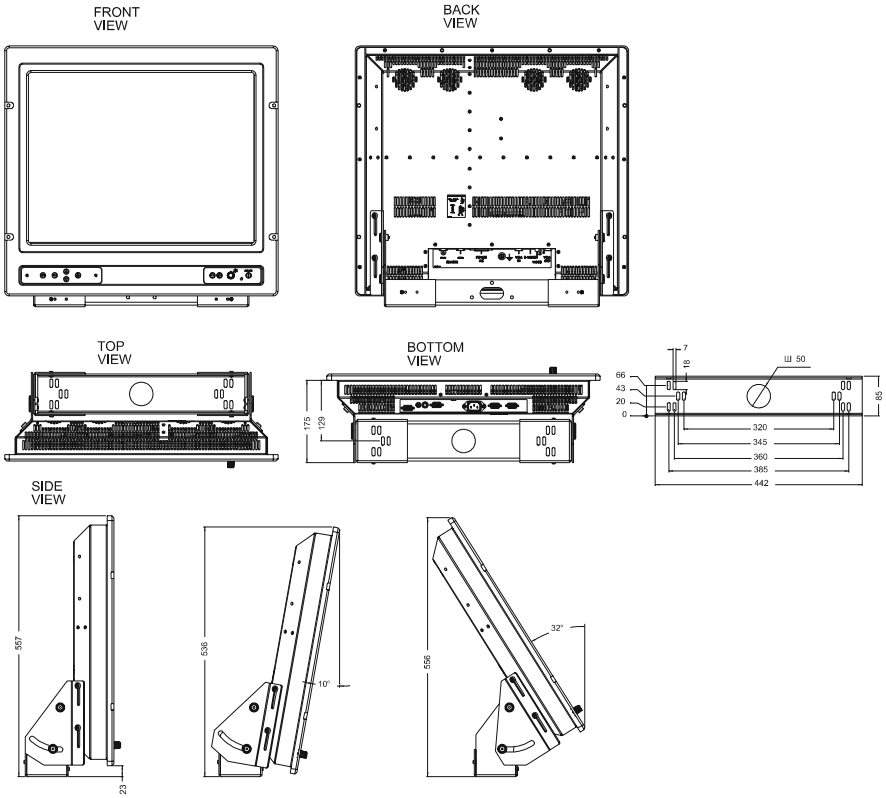


Fig. 12. 23" TFT Hatteland JH 23 T02 MMD. Bracket View

Approvals

Based on IEC60945 3rd ed. E10, CE and classification society approvements:

- DNV (Det Norske Veritas);
- LLOYD's (Lloyd's Register of Shipping);
- BSH (Bundesamt fűr Seeschiffahrt und Hydrographie);
- GL (Germanischer Lloyd);
- ABS (American Bureau of Shipping).

Uninterruptible Power Supply (UPS)

General

The Uninterruptible Power Supply (UPS) is designed to prevent blackouts, brownouts, sags and surges from reaching computer with NC. The UPS also filters out small utility line fluctuations and isolates equipment from large disturbances by internally disconnecting from the utility line, while supplying power from its internal batteries until the utility line returns to safe level.

UPS APC Smart

- Output:
  - Power Out capacity (VA/Watts) – 750/480;
  - Max Config. Power (VA/Watts) – 750/480;
  - Nominal output voltage – 230 VA;
  - Output Voltage Note – 220/230/240 nominal output voltage;
  - Output Connections – IEC 320 C13, IEC Jumpers.
- Input:
  - Nominal input voltage – 230 V;
  - Input freq. – 50/60Hz +/-3Hz (auto sensing);
  - Input Connection Type – IEC-320 C14;
  - Input voltage range – 160-286 V;
  - Input voltage adjustable range – 151-302 V.
- Batteries & Runtime:
  - Battery type – maintenance-free sealed Lead-Acid with suspended electrolyte: leak proof;
  - Replacement battery cartridge – RBC22;
  - Backup Time (full load) – 5.5 minutes (480 Watts);
  - Runtime Chart – Smart UPS.
- Communication & Management:
  - Interface port – DB9 RS232, USB, Smart Slot;
  - LED status display;
  - Audible alarm;
  - Operating temperature – 0 to +40° C;
  - Relative humidity – 0-95%;

  - Size (H x W x D) – 90 mm x 480 mm x 460 mm;
  - Net Weight – 22 kg.
- Approvals:
  - C-tick, CE, EN 50091-1, EN 50091-2, TUV, VDE.

UPS Powerware 5115

- Output:
  - Voltage – 230 VAC nominal;
  - Power Out (VA/Watts) – 750/500;
  - Online Voltage Range – +/-20% of nominal voltage at full load.
- Input:
  - Nominal Input – 45-65 Hz, 50/60 Hz, auto-sensing;
  - Input protection – AC source over current protection device (required);
  - Power level – 750 VA;
  - Interconnecting Cords – 2 ea. IEC-320, 10A;
  - Front Panel Buttons – “On/Off” and alarm silence/self-test;
  - Power Factor – 0.67.
- Batteries & Runtime:
  - Battery Recharge – <3 hours t0 90% capacity;
  - Battery Runtime (Load 750VA/503W) – 6 min;
  - Battery type – Sealed, maintenance-free lead-acid; starved electrolyte.
- Communication & Management:
  - Operating temperature – 0 to +40°C (+32 to +104°F); UL tested +25°C (77°F);
  - Relative humidity – 5-95%, non-condensing;
  - Size (H x W x D) – 193 mm x 150 mm x 335 mm;
  - Unit Weight – 12.4 kg.
- Approvals:
  - Safety Markings – UL, cUL, CSA, CE, TUV;
  - Safety Conformance – UL 1778, CAN/CSA C22.2, No. 107.1; EN 50091-1, IEC 60950;
  - EMC Marking – FCC Class B, CE (EN50091-2), C-Tick;
  - Surge Suppression – ANSI C62.41 Category A (formerly IEEE 587).

UPS Powerware 9120

UPS – Powerware 9120 700VA (DNV required type bypass, EMC tested):

- Output:
  - Output Power – 700 VA/490 W;
  - Output Voltage – 208/220/230/240 VAC, selectable from “LCD” panel;
  - Connection Input – IEC 320 (10 A);
  - Connection Output – 4*IEC 320 (10 A);
  - Technology – On-line, double conversion topology with automatic bypass;

  - Phase – Single phase with ground;
  - Bypass Voltage – 184-265 VAC (user selectable).
- Input:
  - Input Voltage range – 120/140/160* VAC – 276 VAC (Values given for 33%/66%/100% load);
  - Frequency – 50/60 Hz. Auto selection;
  - Input current – 3 A;
  - Input Power factor – 0.97.
- Batteries & Runtime:
  - Battery type – Lead-acid 9 Ah/12V;
  - Number of batteries – 2;
  - Backup time/full load – 8 min;
  - Recharge time – <5 hours to 90%;
  - Voltage regulation – +/-2%.
- Communication & Management:
  - Ambient temperature – +0 C…+40 C;
  - Recommended temperature – +15 C…+25 C;
  - Humidity – 0-95%, non-condensing;
  - Cooling – Forced air cooling;
  - Size (H x W x D) – 245 mm x 155 mm x 410 mm;
  - Unit Weight – 13 kg.
- Approvals:
  - EN50091-1-1 (Safety);
  - EN50091-2 (Emissions);
  - EN50091-2 (Immunity).

UPS MGE Extreme 1500 C Rack Marine

- Power (VA/Watts) at full load 1500 VA/1050 W;
- Frequency management: 50/60 Hz or 40-70 Hz;
- Works default on 50/60 Hz frequency (auto select) without draining batteries, adjusted to accept 40 – 70 Hz (max. half load);
- Environment:
  - Acoustic noise 40dBA;
  - Operating temperature -15 deg. C. to 55 deg. C. (IEC 60 945).
- Standards:
  - Performance EN 50091-3/IEC 62040-3;
  - Safety EN 50091-1, EN 60950, IEC 60945, EMC EN 50091-2/IEC62040-2, EN 50022/B, FCC 47 Part 15- subpart B – class A, IEC 60945, IEC 61000-4-2/-3/-4/-5/-6/-8/-11, IEC 61000-3-2/-3;
  - Marking and certifications CE, TЬV/GS, UL, cUL, C-Tick, 130;
  - Design and manufacturing ISO 9001.

- Dimensions H x W x D: 132(3U) x482, 6 x 493 mm;
- UPS weight Rack + filter 22 kg;
- Automatic bypass;

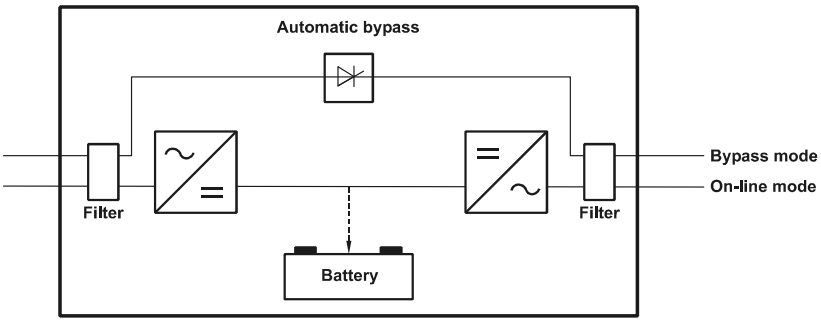


Fig. 13. Automatic Bypass Scheme

- UPS Options:
  - Pulsar Extra Battery;
  - Status Information Board.

Transas Consoles

General

Transas consoles are designed for mounting of Navi-Conning hardware. Two types of consoles are provided: Transas Console Version 5.2 (Deck mount) and Transas Console Version 5.0 (Desk mount). Both consoles are made of steel.

Transas Console Version 5.2

Transas Console Version 5.2 supports 23” TFT industrial monitor.

To install Hatteland JH 20 T04 MMD E1 monitor in 23” TFT console, use Console Reduction Frame 23”/20” TFT (see Fig. 16).

To install Hatteland JH 19 T04 MMD E1 monitor in 23” TFT console, use Console Reduction Frame 23”/19” TFT (see Fig. 17).

4 holes of 12 mm diameter intended for fixing a console to the deck are located on the bottom of a console.

The consol is equipped with two sets of vertical and horizontal straps for 19” rack mounting devices (see Fig. 14), “On/Off” button and connection board intended for power supply and data exchange.

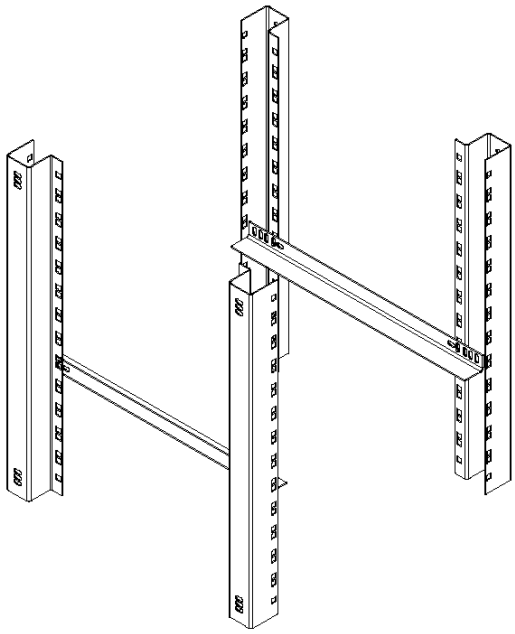


Fig. 14. Mounting Straps

Overall and installation dimensions are specified in Fig. 15.

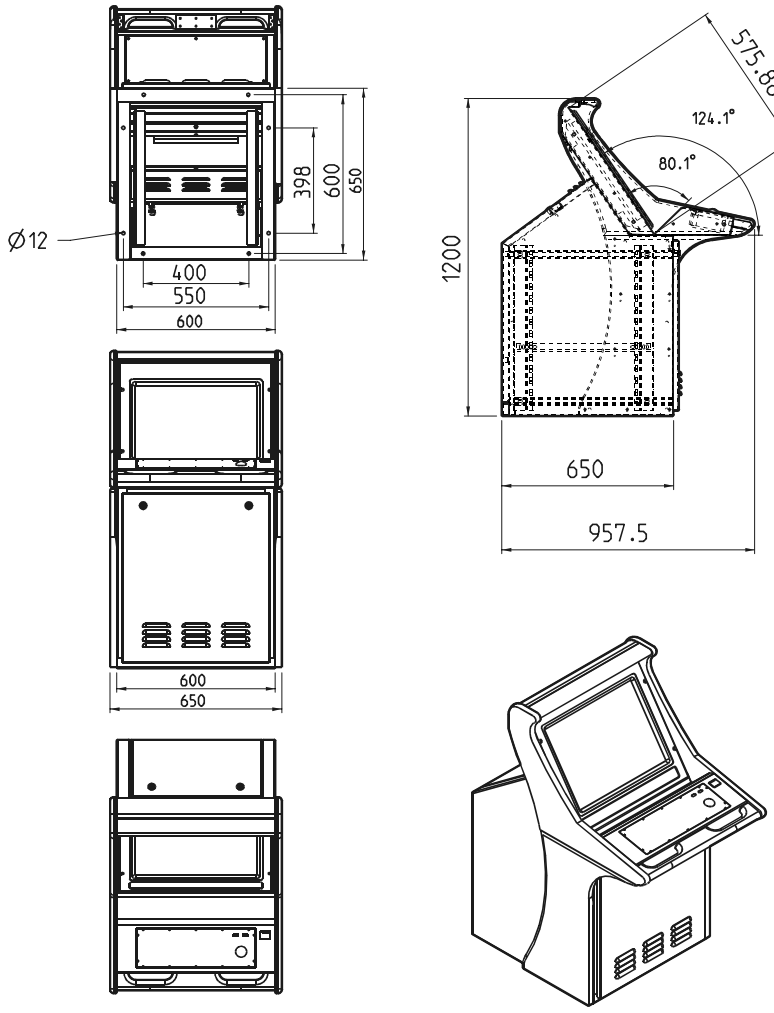


Fig. 15. Transas Console Version 5.2

Console Reduction Frame 23"/20" TFT

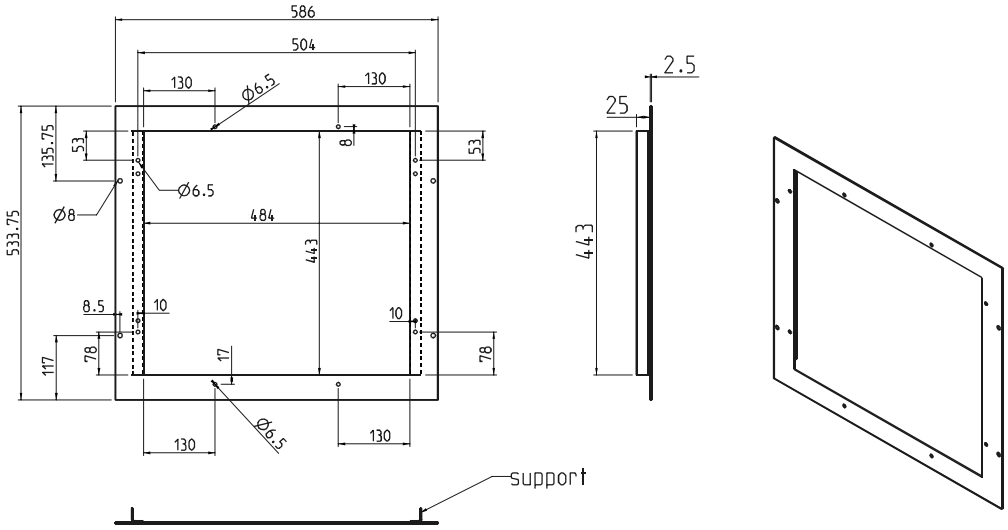


Fig. 16. Console reduction frame 23"/20" TFT

Console Reduction Frame 23"/19" TFT

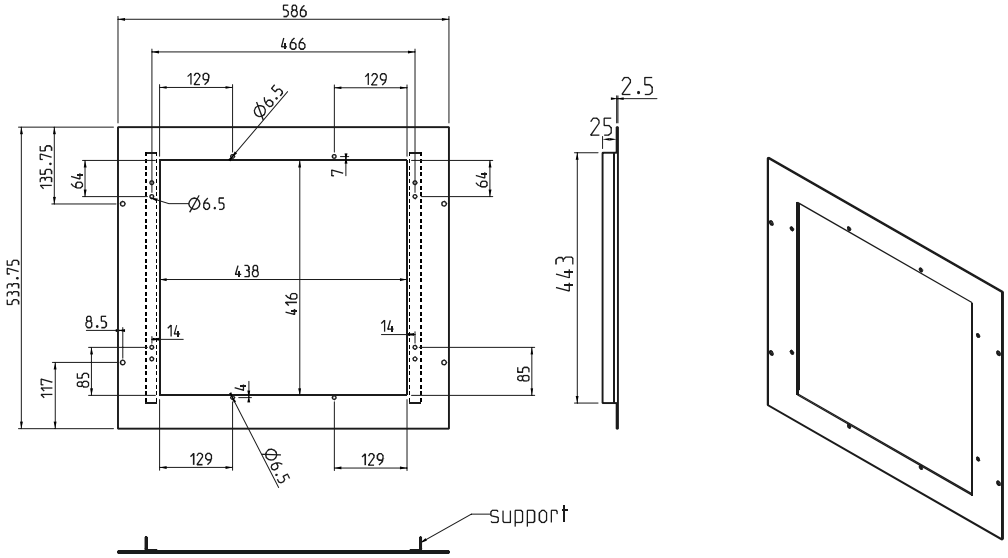


Fig. 17. Console Reduction Frame 23"/19" TFT

This unit is an optional component for 5.2 version console.

Opto Isolated Converters

The opto isolator converter can be used like alternative receiving scheme in its navigation systems, which can receive RS-422A, RS 423A, RS-232 signals in the COM ports (one opto isolator type), as well as current loop signals (another type of opto isolators).

The outward appearance and view of Opto Isolated Converters when disassembled is shown in the drawings.

Wiring diagrams and basic circuits are provided in **Annex C** paragraph **Additional Information on Sensor Connections**.

Fig. 18. Opto Isolated Converter – DB-9 (without cable)

Fig. 19. Opto Isolated Converter – DB-25 (without cable)

Fig. 20. Opto Isolated Converter – Current Loop

CHAPTER 2

Installation and Registration of the NC

This chapter provides notes on installation and adjustment of the NC program, procedures for system registration and back-up.

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This chapter contains:

Installation of Equipment 65
Console Installation 65
Dongle Installation 65
Network Installation 65
Sensors Connections 66
Software Installation 67
Navi-Conning 3000 Installation 67
Navi-Conning 3000 Settings 74
Turning Navi-Conning Setup Utility on/off 74
Setting of Screen Resolution 75
Adjustment of the Input Data Display 76
General 76
Setting of Parameter Sources 76
Automatic Adjustment of Screen Views 78
Manual Adjustment of Screen Views 87
Adjustment of Alarm Generation 101
Connection and Adjustment of Output Functionality 105
Connection of Output Functionality 105
Setting of Parameter Receivers 105
Setting of Parameters Output 107
Adjustment of ComPort Retransmission 117
Transas Integrator 120
General 120
Installation 120
Deinstallation 121
Saving of the Generated Configuration (Backup Copy) 121
Performance of Registration Procedure 123

INSTALLATION OF EQUIPMENT

The first thing you should do is select a suitable place for the equipment installation, taking into account Rules and Regulations of Classifications Societies. All the equipment should be securely fastened.

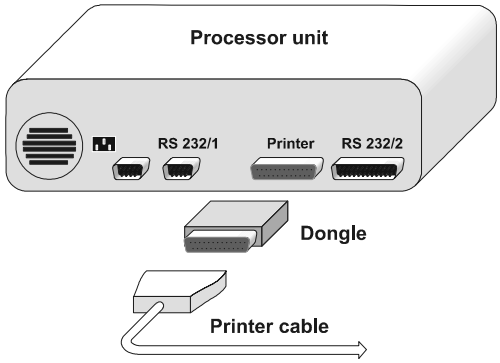
Installation engineer has to work out an installation plan and submit it for the captain's approval.

Console Installation

It is necessary to arrange power distribution in the console. It is recommended that the console power switch should be used for switching to 220V AC output from a UPS. Power inputs inside the console will be connected to the UPS output via the power switch. The ship mains will be connected to the UPS input via an external power switch.

Dongle Installation

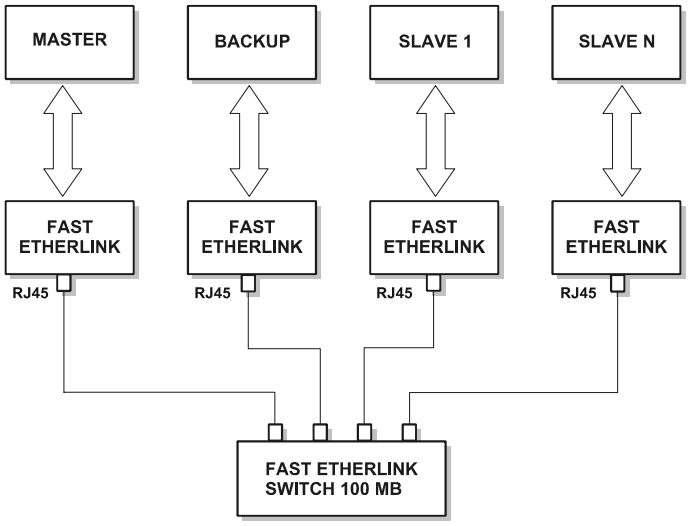
After the computer has been mounted securely in its place, connect the dongle to the computer's printer port, as shown in the drawing below. The dongle should be connected to the printer port of a personal or industrial computer before the software installation.



The NC will not operate unless the dongle is connected to the computer.

Network Installation

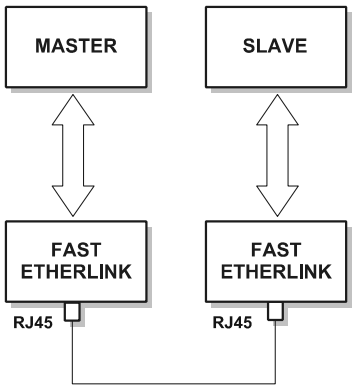
The figure below provides an example of 4 networked stations:



For this diagram admissible length of cables between the hub and the computer should be:

- 100 m with grounding;
- 75 m without grounding.

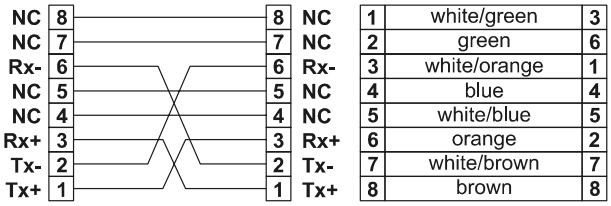
If only two stations are networked, the hub may be spared.



For this diagram admissible length of cables between two computers should be:

- 90-100 m if both computers are grounded with the same (common) earthing;
- 45-50 m without earthing.

Connection of stations should be carried out with a cross-over link cable, category TP5. The figure below shows a diagram for cross-over cable.



Sensors Connections

For the connection of the NC with navigational sensors, use double core screened cable in the insulating shell, category TP5. The screen is connected to earthing on the sensor side. Where the level of electromagnetic field is insignificant, “twisted pair” type unscreened cable may be used. As the electric current in the cable does not exceed 20 ma the conductors’ cross section is of no importance. The maximum length of the cable will depend on the type of interface.

Interface and power cables must be lain in cable routes, fixed and marked with labels.

See **Annex C** for more detailed information on the computer communication ports, RS 232 standard and some block diagrams.

SOFTWARE INSTALLATION

ATTENTION!

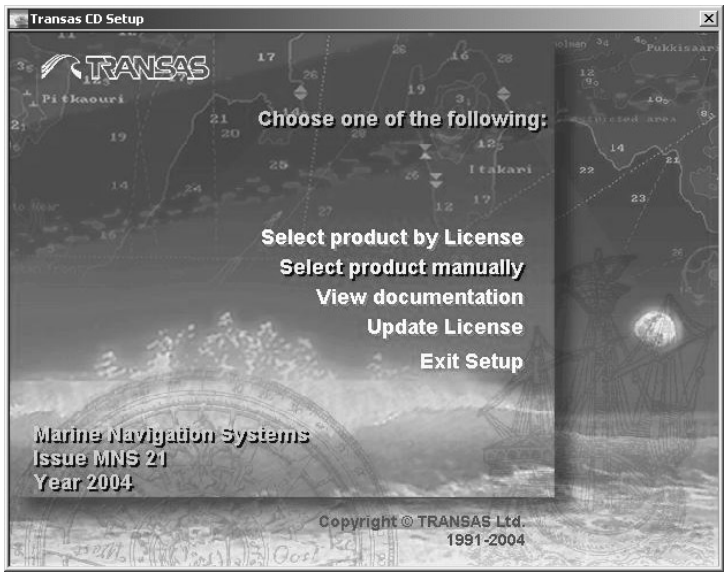
For a detailed description of Windows NT and Windows 2000 OS settings, see **Annex B**.

During the installation, it is necessary to pay attention to the digit display format set in Regional Settings (*Start\Settings\Control panel*) menu. The setting for the division between the integral and decimal parts of the number should be "." (point).

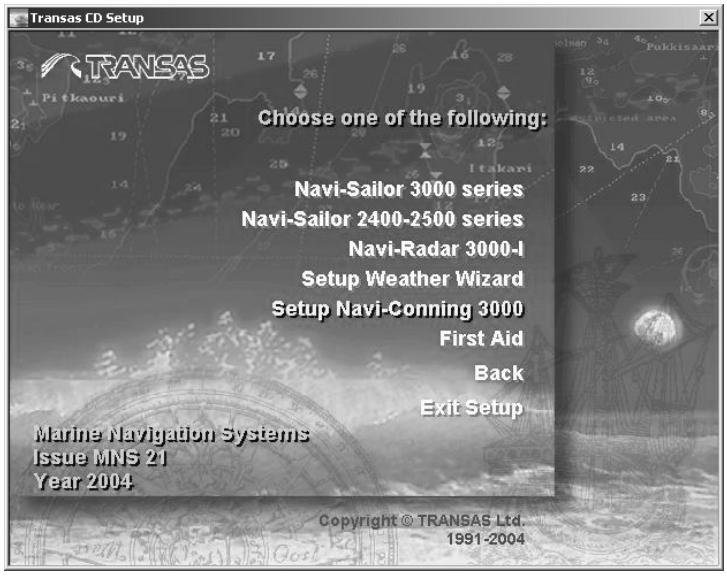
Navi-Conning 3000 Installation

Insert "MARINE NAVIGATION SYSTEMS" CD in the disk drive.

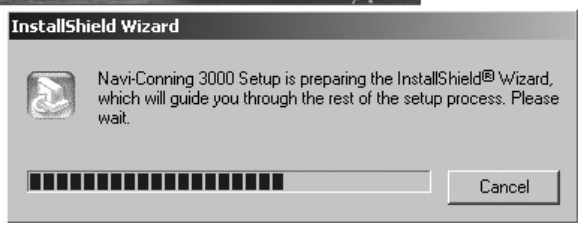
In several seconds, "Transas CD Setup" autoload program will offer you a dialogue window for the selection of the product to be installed (this operation can be performed "manually" by selecting `Setup.exe` file in the disk root directory):

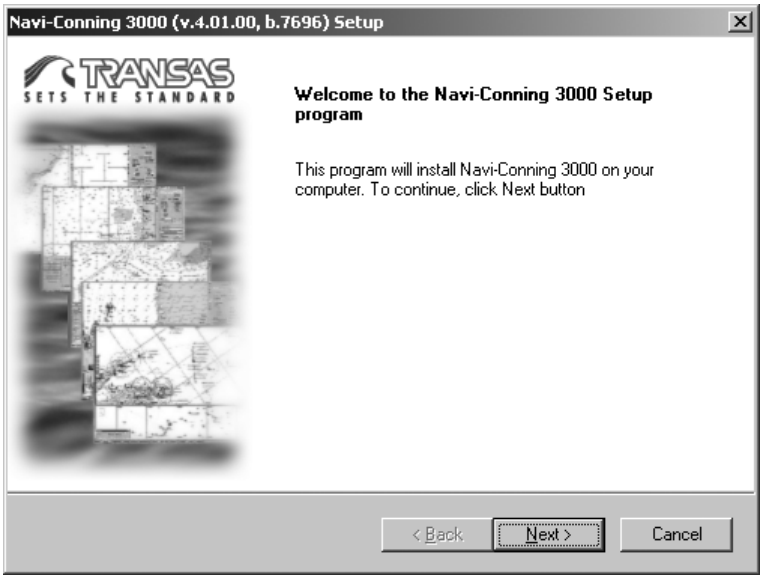


Select "Select product manually" line: the line turns yellow.



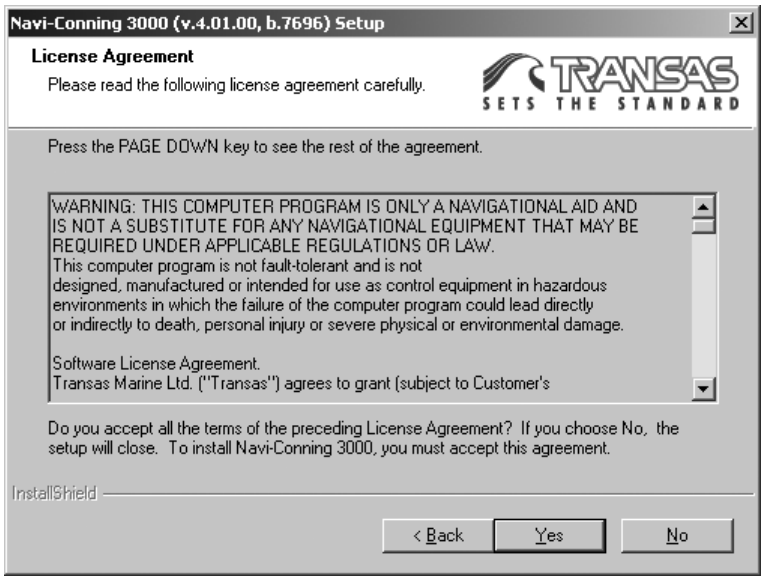
Select “Setup Navi-Conning” line: the line turns yellow.


InstallShield Wizard
Navi-Conning 3000 Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.
Cancel

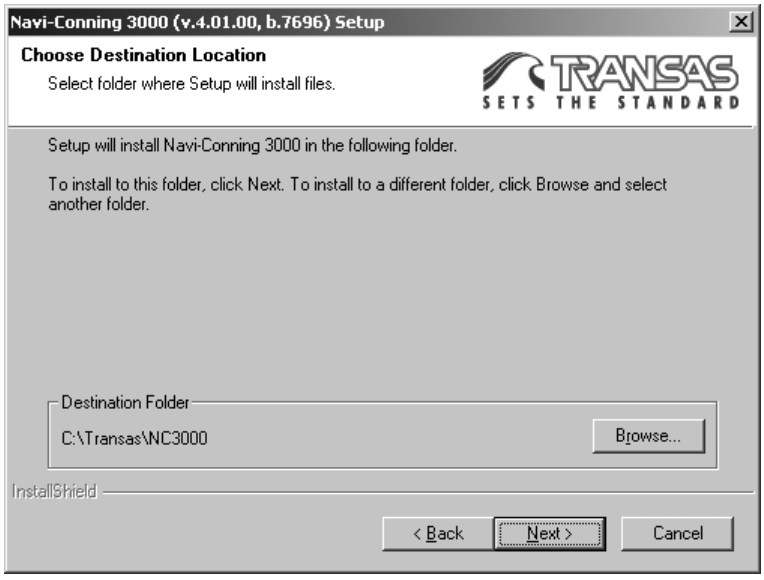

Navi-Conning 3000 (v.4.01.00, b.7696) Setup
TRANSAS
SETS THE STANDARD
Welcome to the Navi-Conning 3000 Setup program
This program will install Navi-Conning 3000 on your computer. To continue, click Next button
< Back
Next >
Cancel

Press “Next>” button.

The screen displays a window containing the licensing agreement text.

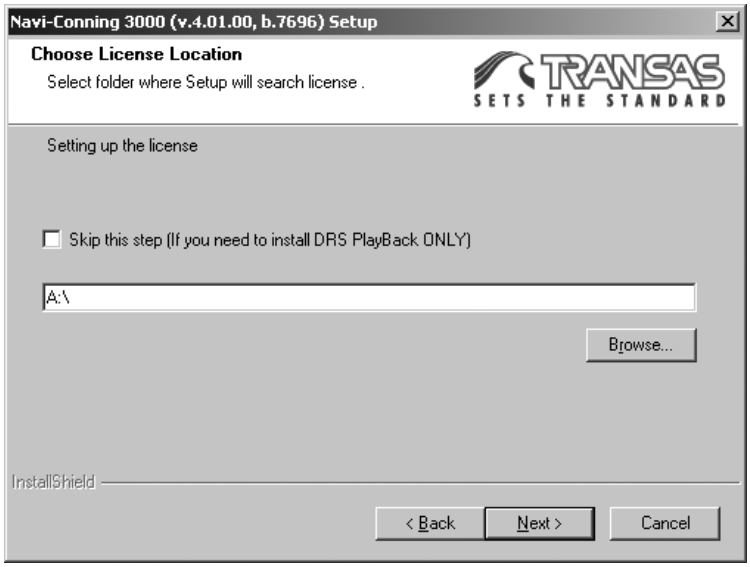

Navi-Conning 3000 (v.4.01.00, b.7696) Setup
License Agreement
Please read the following license agreement carefully.
TRANSAS
SETS THE STANDARD
Press the PAGE DOWN key to see the rest of the agreement.
WARNING: THIS COMPUTER PROGRAM IS ONLY A NAVIGATIONAL AID AND IS NOT A SUBSTITUTE FOR ANY NAVIGATIONAL EQUIPMENT THAT MAY BE REQUIRED UNDER APPLICABLE REGULATIONS OR LAW.
This computer program is not fault-tolerant and is not designed, manufactured or intended for use as control equipment in hazardous environments in which the failure of the computer program could lead directly or indirectly to death, personal injury or severe physical or environmental damage.
Software License Agreement.
Transas Marine Ltd. ("Transas") agrees to grant (subject to Customer's
Do you accept all the terms of the preceding License Agreement? If you choose No, the setup will close. To install Navi-Conning 3000, you must accept this agreement.
InstallShield
< Back
Yes
No

Press “Yes” button.


Navi-Conning 3000 (v.4.01.00, b.7696) Setup
Choose Destination Location
Select folder where Setup will install files.
TRANSAS
SETS THE STANDARD
Setup will install Navi-Conning 3000 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Transas\NC3000
Browse...
InstallShield
< Back
Next >
Cancel

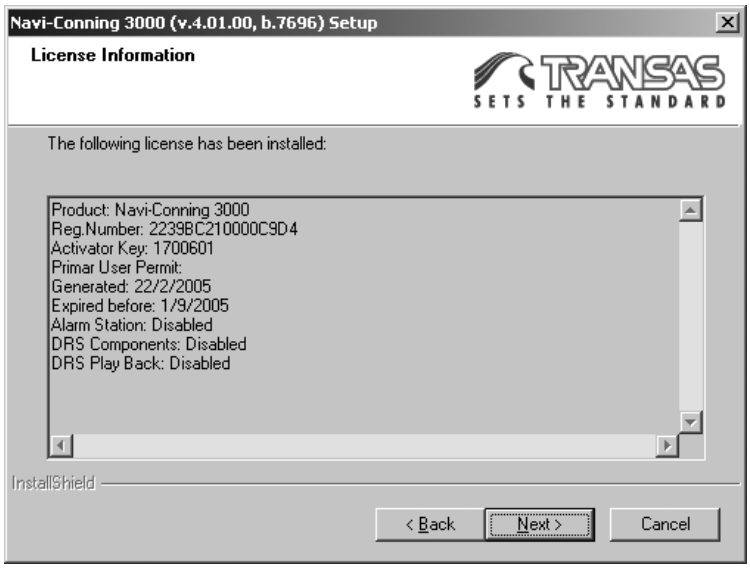
Specify the product installation path (*C:\Transas\NC3000* by default).

Press “Next” button.

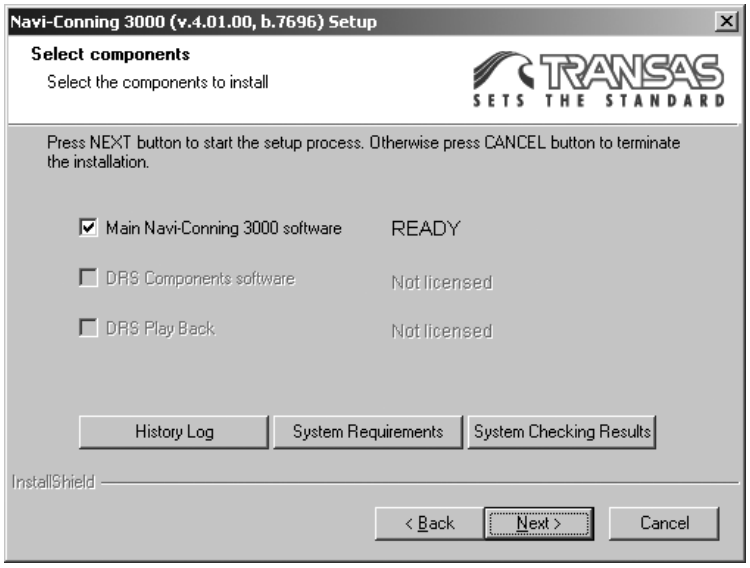


Specify path to the product license (*A*:\ by default).

Press “Next” button.



Press “Next>” button.

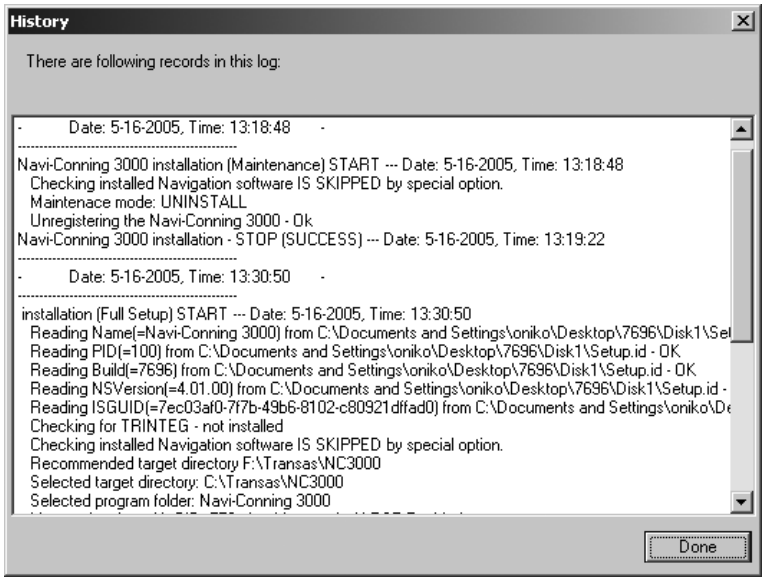


ATTENTION!

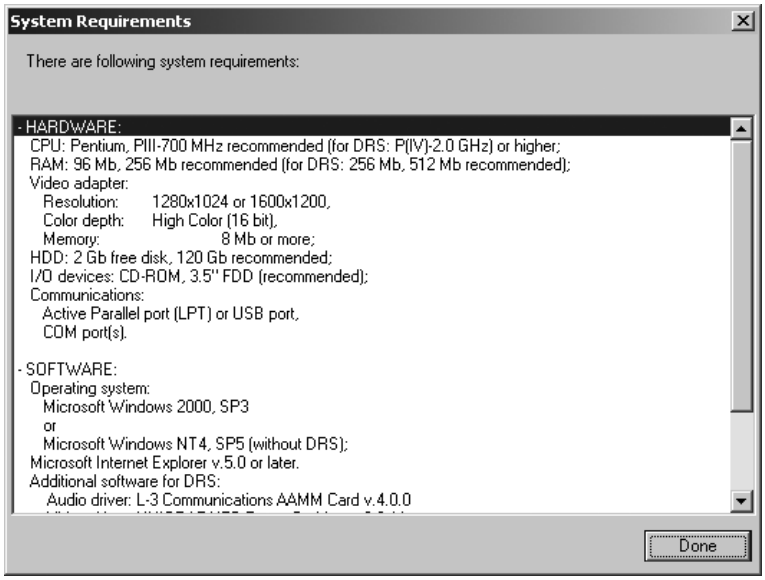
For details of installation of the NC 3000 with the active options “Alarm Station” and “Data Recording System” see **NAVI-CONNING 3000 (V. 4.01.00). ALARM STATION FUNCTIONALITY DESCRIPTION** and **NAVI-CONNING 3000 (V. 4.01.00). DATA RECORDING SYSTEM FUNCTIONALITY DESCRIPTION** documents accordingly.

Operate with the following buttons to acquire the necessary information:

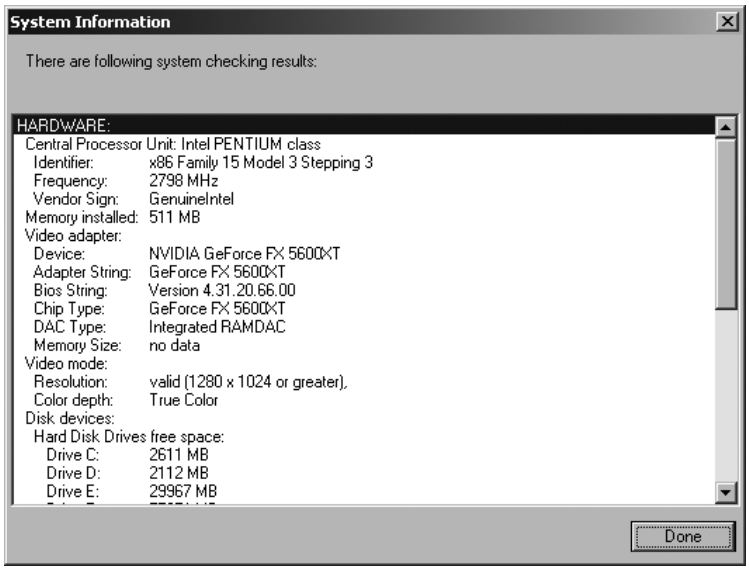
- **History Log** – the button intended for displaying the information related to all operations with the Transas products on this workstation:


History
There are following records in this log:
- Date: 5-16-2005, Time: 13:18:48 -
Navi-Conning 3000 installation (Maintenance) START --- Date: 5-16-2005, Time: 13:18:48
Checking installed Navigation software IS SKIPPED by special option.
Maintenace mode: UNINSTALL
Unregistering the Navi-Conning 3000 - Ok
Navi-Conning 3000 installation - STOP (SUCCESS) --- Date: 5-16-2005, Time: 13:19:22
- Date: 5-16-2005, Time: 13:30:50 -
installation (Full Setup) START --- Date: 5-16-2005, Time: 13:30:50
Reading Name(=Navi-Conning 3000) from C:\Documents and Settings\oniko\Desktop\7696\Disk1\Se
Reading PID(=100) from C:\Documents and Settings\oniko\Desktop\7696\Disk1\Setup.id - OK
Reading Build(=7696) from C:\Documents and Settings\oniko\Desktop\7696\Disk1\Setup.id - OK
Reading NSVersion(=4.01.00) from C:\Documents and Settings\oniko\Desktop\7696\Disk1\Setup.id -
Reading ISGUID(=7ec03af0-7f7b-49b6-8102-c80921dffad0) from C:\Documents and Settings\oniko\De
Checking for TRINTEG - not installed
Checking installed Navigation software IS SKIPPED by special option.
Recommended target directory F:\Transas\NC3000
Selected target directory: C:\Transas\NC3000
Selected program folder: Navi-Conning 3000
Done

- **System Requirements** – the button is intended for displaying the hardware and software requirements for the software components to be installed:

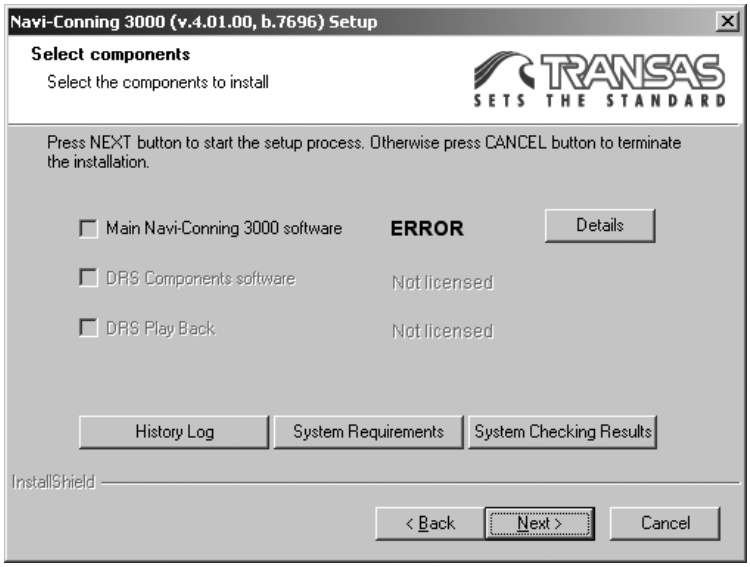

System Requirements
There are following system requirements:
- HARDWARE:
CPU: Pentium, PIII-700 MHz recommended (for DRS: P(IV)-2.0 GHz) or higher;
RAM: 96 Mb, 256 Mb recommended (for DRS: 256 Mb, 512 Mb recommended);
Video adapter:
Resolution: 1280x1024 or 1600x1200,
Color depth: High Color (16 bit),
Memory: 8 Mb or more;
HDD: 2 Gb free disk, 120 Gb recommended;
I/O devices: CD-ROM, 3.5" FDD (recommended);
Communications:
Active Parallel port (LPT) or USB port,
COM port(s).
- SOFTWARE:
Operating system:
Microsoft Windows 2000, SP3
or
Microsoft Windows NT4, SP5 (without DRS);
Microsoft Internet Explorer v.5.0 or later.
Additional software for DRS:
Audio driver: L-3 Communications AAMM Card v.4.0.0
Done

- **System Checking Results** – the button is intended for displaying the results of hardware and software checking prior to installation:


System Information
There are following system checking results:
HARDWARE:
Central Processor Unit: Intel PENTIUM class
Identifier: x86 Family 15 Model 3 Stepping 3
Frequency: 2798 MHz
Vendor Sign: GenuineIntel
Memory installed: 511 MB
Video adapter:
Device: NVIDIA GeForce FX 5600XT
Adapter String: GeForce FX 5600XT
Bios String: Version 4.31.20.66.00
Chip Type: GeForce FX 5600XT
DAC Type: Integrated RAMDAC
Memory Size: no data
Video mode:
Resolution: valid (1280 x 1024 or greater),
Color depth: True Color
Disk devices:
Hard Disk Drives free space:
Drive C: 2611 MB
Drive D: 2112 MB
Drive E: 29967 MB
Done

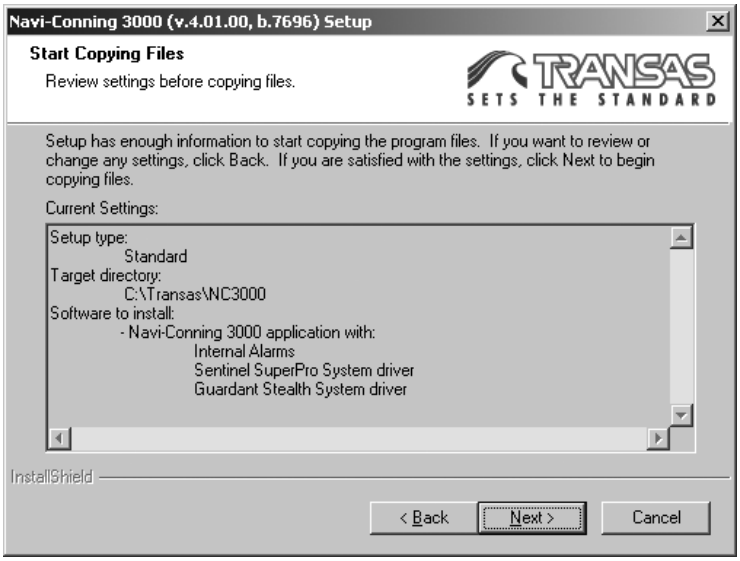
The following messages are displayed in the “Select Components” window representing compliance of the software to be installed with the workstation settings and parameters:

- **READY** – the workstation settings and parameters were checked and found corresponding to the software requirements. Selected components are available for installation;
- **WARNING** – the workstation settings and parameters were checked and found partly (non-critically) non-corresponding to the software requirements. Selected components are available for installation;
- **ERROR** – the workstation settings and parameters were checked and found non-corresponding to the software requirements. Selected components cannot be installed; the corresponding checkboxes will be disabled:

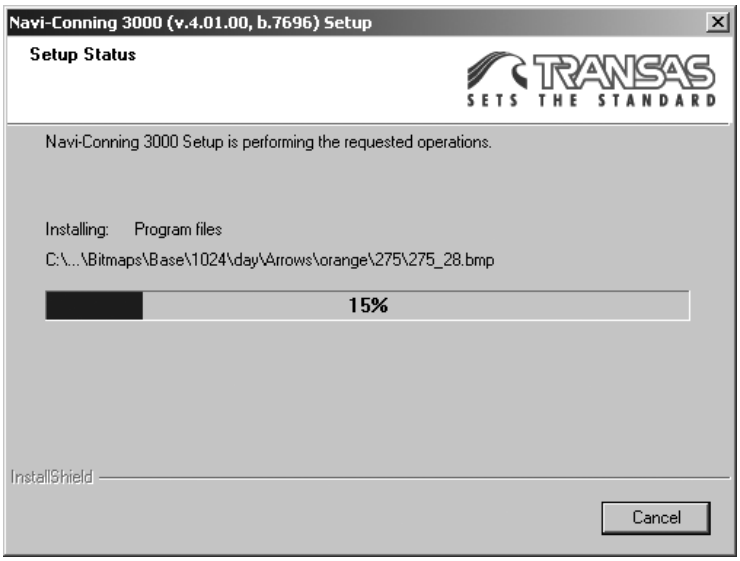


To view the error/warning summary, press the **Details** button. Cancel the installation process by pressing the “Cancel” button. Fix all mentioned non-conformities and perform the repeated system installation.

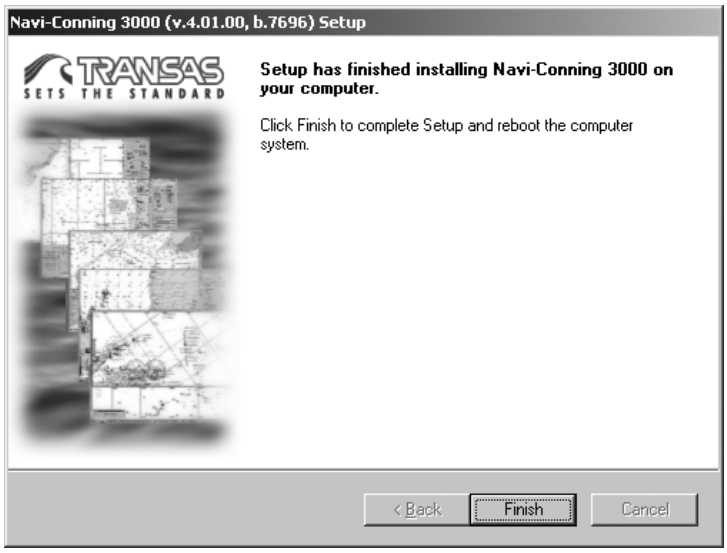
If no error messages were displayed, continue the software installation by pressing the “Next” button. The window containing information about selected components will be displayed.


Navi-Conning 3000 (v.4.01.00, b.7696) Setup
Start Copying Files
Review settings before copying files.
TRANSAS
SETS THE STANDARD
Setup has enough information to start copying the program files. If you want to review or change any settings, click Back. If you are satisfied with the settings, click Next to begin copying files.
Current Settings:
Setup type:
Standard
Target directory:
C:\Transas\NC3000
Software to install:
- Navi-Conning 3000 application with:
Internal Alarms
Sentinel SuperPro System driver
Guardant Stealth System driver
InstallShield
< Back
Next >
Cancel

Press “Next>” button. The program will perform the product installation.



The following window will be displayed after completion of the installation:

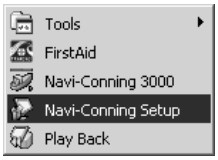

Navi-Conning 3000 (v.4.01.00, b.7696) Setup
TRANSAS
SETS THE STANDARD
Setup has finished installing Navi-Conning 3000 on your computer.
Click Finish to complete Setup and reboot the computer system.
< Back
Finish
Cancel

Press “Finish” button to complete the installation. The computer will be restarted.

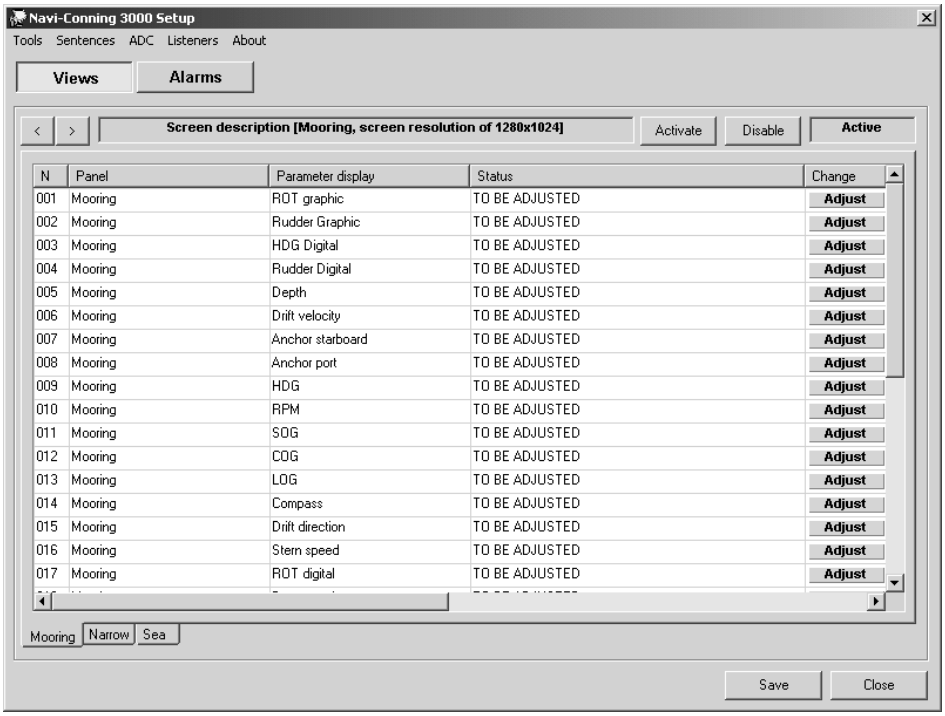
NAVI-CONNING 3000 SETTINGS

Turning Navi-Conning Setup Utility on/off

Turn on the “Navi-Conning Setup” utility by selecting the appropriate name in the Main menu.



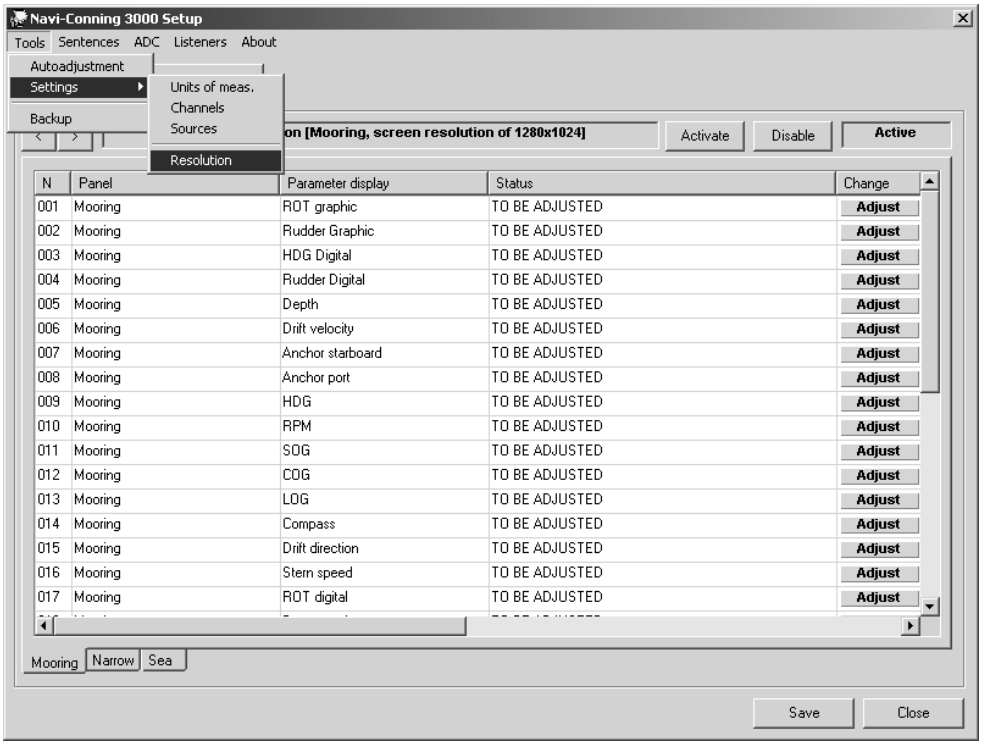
After the program loading, the “Navi-Conning 3000 Setup” screen will be displayed.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

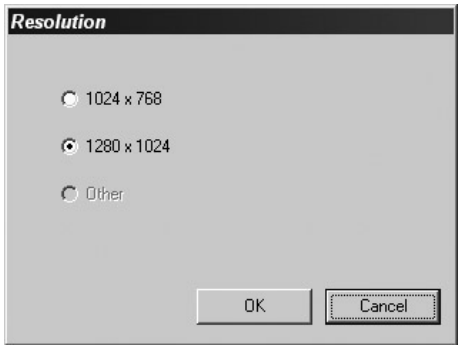
“Close” button serves for exiting from “Navi-Conning Setup” utility.

Setting of Screen Resolution

Open TOOLS menu of the Main menu.



In TOOLS menu which will open up, select RESOLUTION option of SETTINGS submenu.



Select the necessary screen resolution.

Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

Adjustment of the Input Data Display

General

The Screen View adjustment consists in associating parameters supplied by different sources, with indicators of the selected Screen View. The associating procedure depends on the interface type used by the source of information. The adjustment procedure includes the following stages:

- Setting of data sources;
- Automatic adjustment for Screen Views (which may also include the setting of new parameter sources);
- Manual adjustment for Screen Views.

The adjustable Screen Views are shuffled by using < > buttons in the top left part of the “Views” window.

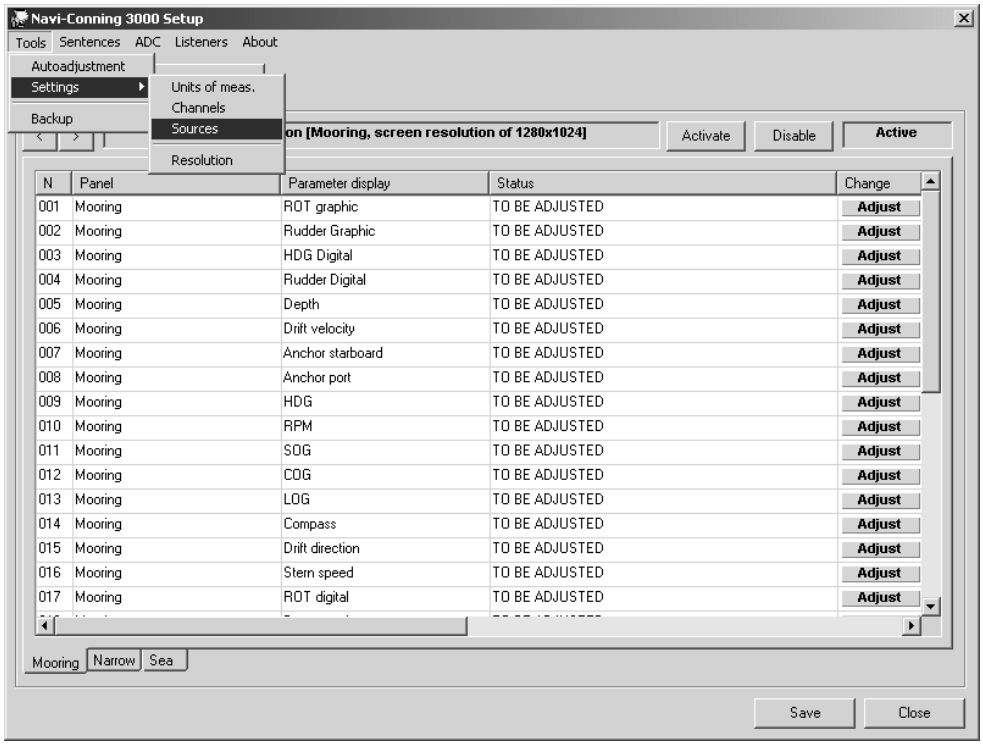
To switch from one Screen View to another use tabs with Screen View names in the bottom part of the page.

By default, all the Screen Views are activated (the indicator in the top right corner of the window has “Active” status), so when “Navi-Conning” application is run, they will all be displayed on the NS screen. To turn the display off, press “Disable” button of the necessary Screen View.

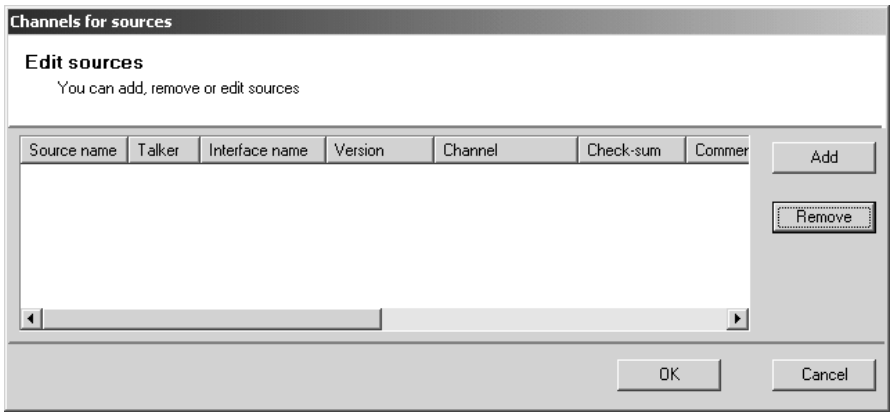
Note: As “Navi-Conning” application is started with all the Screen Views “Not active”, Screen View with TRANSAS logo appears on the display.

Setting of Parameter Sources

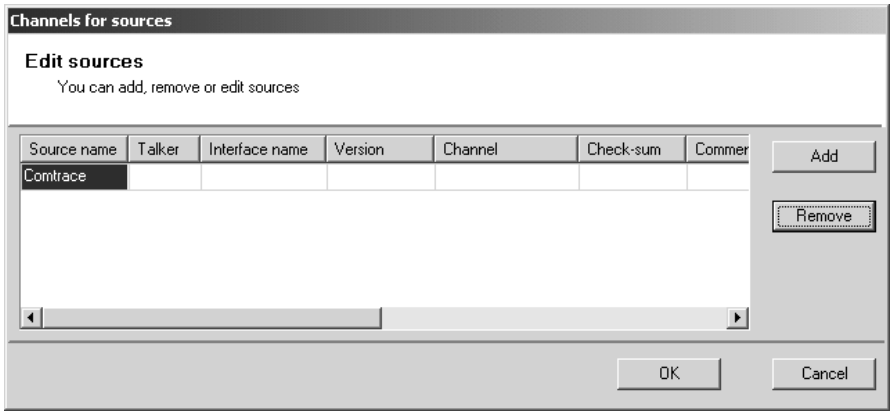
Open TOOLS menu of the Main menu.



In TOOLS menu which will open up, select SOURCES option of SETTINGS submenu. To add a source of information, press “Add” button in “Edit Sources” window which will open up.



Position the cursor on a cell in “Source Name” column and double click the left trackball/mouse button. Enter the name of the parameter source and press <Enter>.



Use a similar procedure to enter the following characteristics of the parameter source:

- Identifier of the information source (2 characters) in “Talker” column (only for NMEA interface):
  - with the information source identifier available, the incoming sentence “Talker” is checked, and if these do not match each other, the sentence is ignored;
  - in the absence of the information source identifier, sentences with any “Talker” are accepted.
- Type of interface for the operation with this source in “Interface name” column:
  - **NMEA**;
  - **ADC**;
  - **NS – Network**.
- Version of the selected interface in “Version” column:
  - NMEA:

    Ver 3.1;
    Ver. 3.0;
    Ver 2.1;
    Custom.
  - ADC:

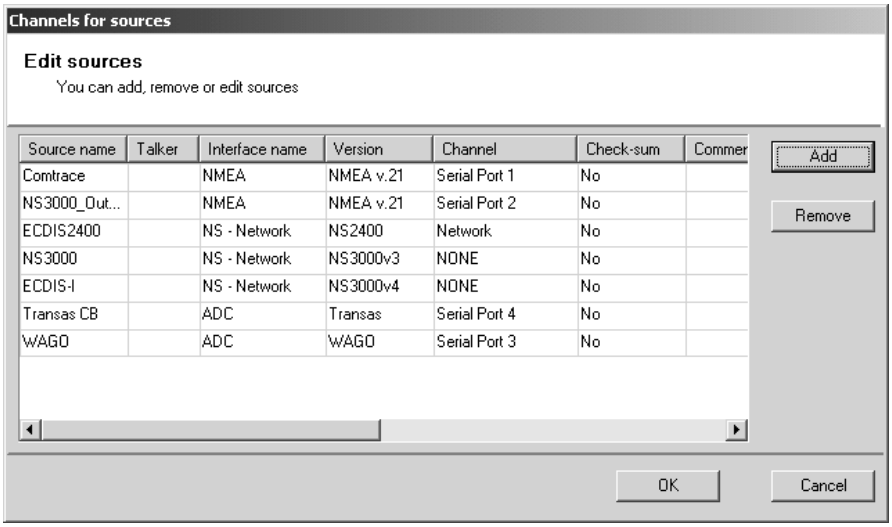
    WAGO;
    Transas.

– NS – Network:

NS 3000 v.4;
NS 3000 v.3;
NS 2400.

- Parameter source connection channel in “Channel” column (selected from the list of channels for each interface);
- Check of a checksum of sentences supplied from the given source of information in “Checksum” column:
  – **Yes** – the checksum of sentences is checked, if there is a disagreement between the checksums, the sentence is ignored;
  – **No** – the sentence is always accepted, regardless of the checksum agreement.
- Comments in “Comments” column.

By using “Add” button, set the required number of parameter sources.



Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

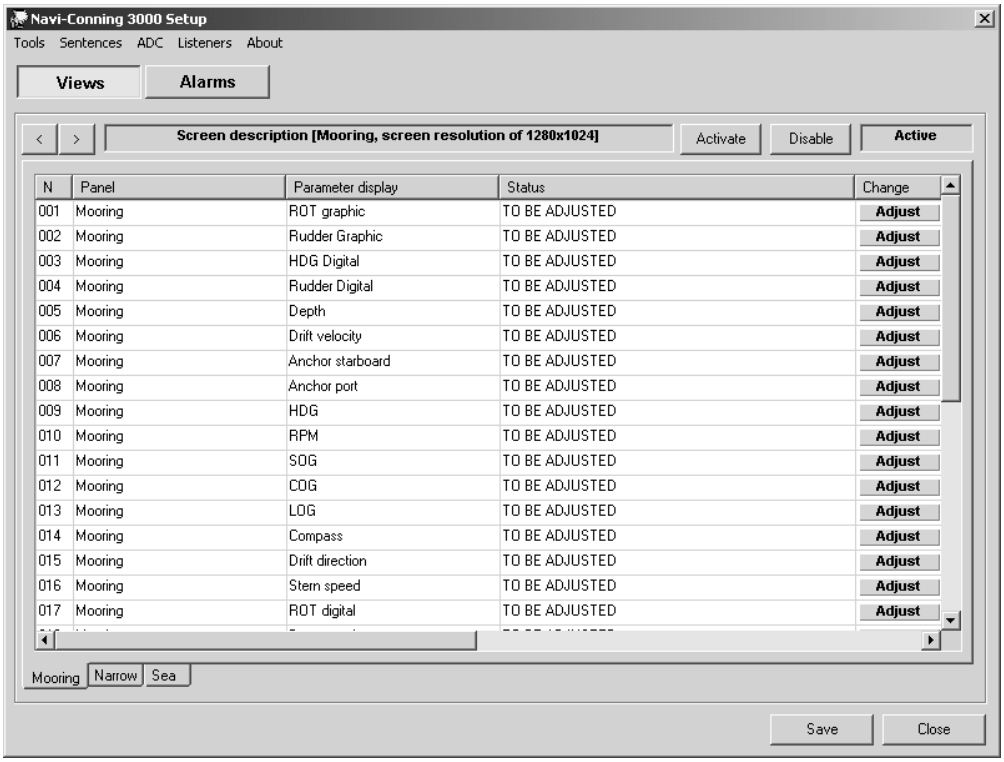
Automatic Adjustment of Screen Views

The setup of Screen Views for NMEA, network and Transas Conning Box interfaces, should be started in the automatic mode. From the stream of parameters supplied by different channels, from the automatic adjustment database that parameter is selected for each indicator, which this indicator should display. The indicator is then linked to the selected parameter.

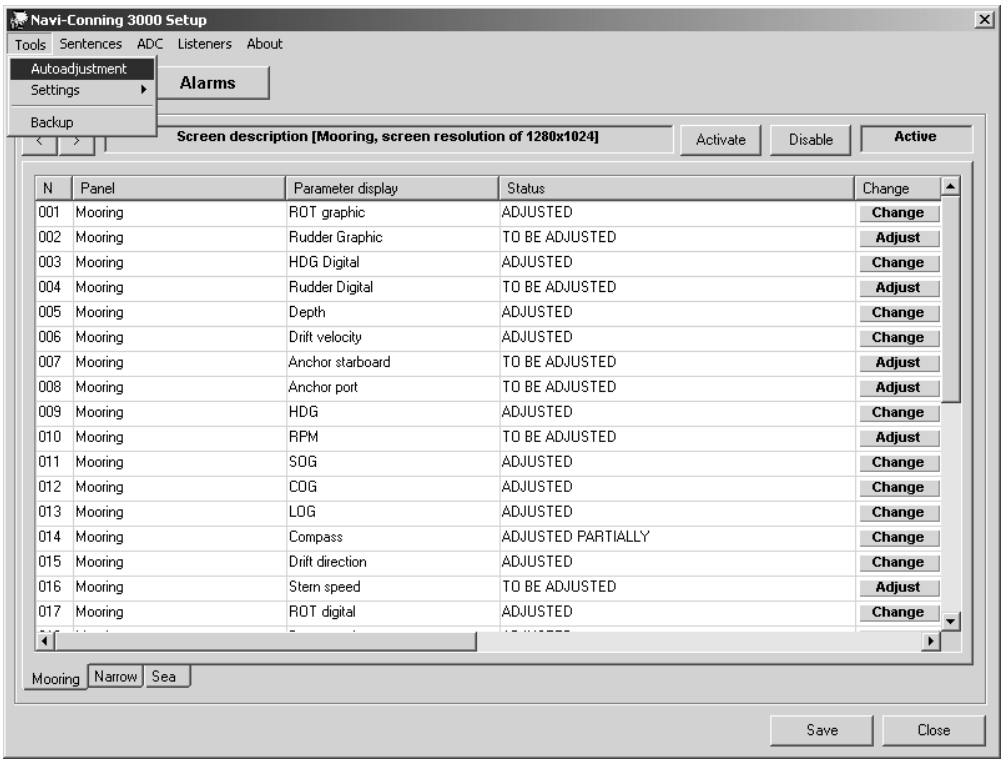
ATTENTION!

The automatic adjustment function operates with active “Screen Views” only (information window in the right hand part of the “Views” window displays “Active” message).

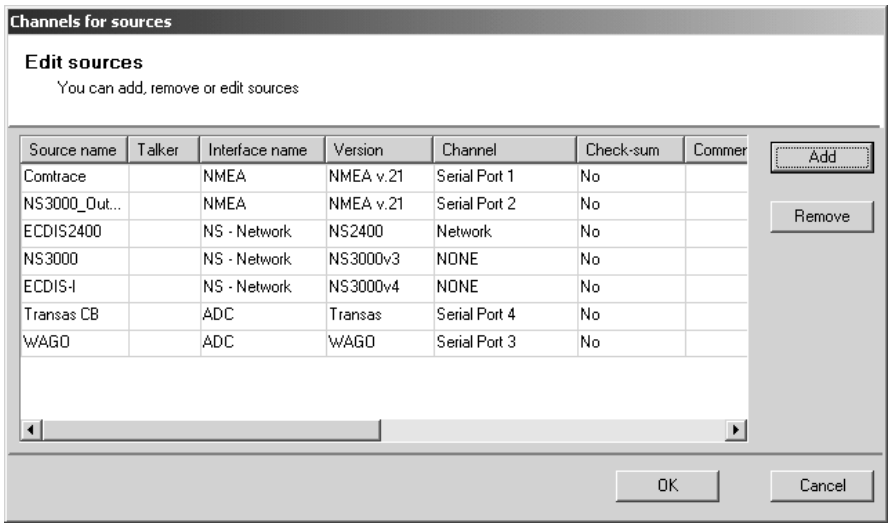
Press “Active” button to make the Screen View active. By going through tabs in the bottom part of the page, check that all the Screen Views which will be adjusted automatically, are active.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring Narrow Sea
Save
Close

Open TOOLS menu of the Main Menu.

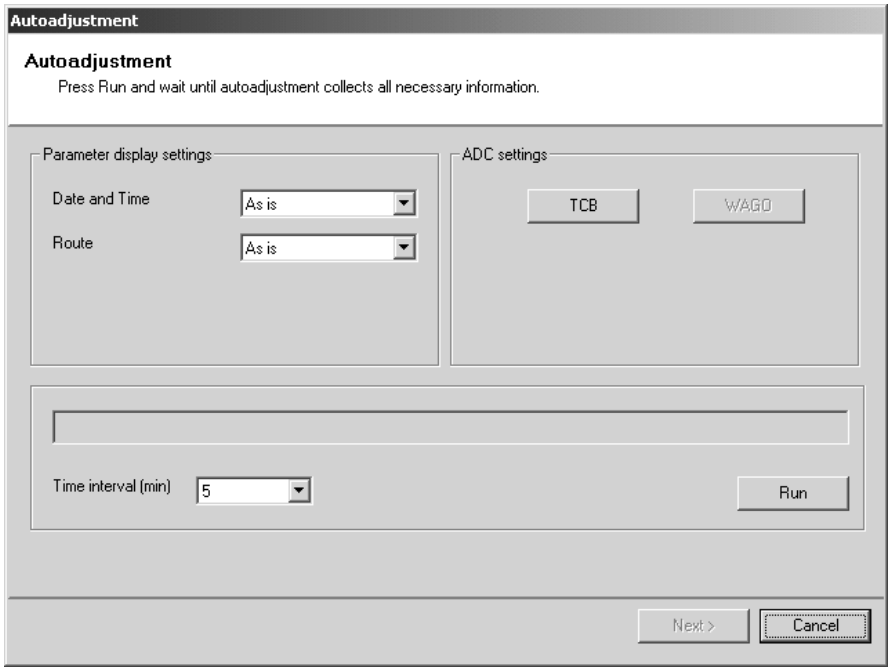

Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Autoadjustment
Settings
Backup
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic ADJUSTED Change
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital ADJUSTED Change
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth ADJUSTED Change
006 Mooring Drift velocity ADJUSTED Change
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG ADJUSTED Change
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG ADJUSTED Change
012 Mooring COG ADJUSTED Change
013 Mooring LOG ADJUSTED Change
014 Mooring Compass ADJUSTED PARTIALLY Change
015 Mooring Drift direction ADJUSTED Change
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital ADJUSTED Change
Mooring Narrow Sea
Save
Close

In TOOLS menu which will open up, select AUTOADJUSTMENT option.



Set the necessary sources of parameters which supply information (see paragraph **Setting of Parameter Sources**).

Press “OK” button.



From **Date and Time** drop-down list in **Parameter display settings** group select the necessary source for the date and time parameters:

- **Network** – parameters are supplied by the network;
- **NMEA. RMC** – parameters are supplied in RMC sentence;
- **NMEA. ZDA** – parameters are supplied in ZDA sentence;
- **As Is** – the previous adjustment settings are effective (in the case of the first adjustment – the default settings, see document **NAVI-CONNING 3000 (V. 4.01.00). USER MANUAL**, paragraph **Screen View Indicator Table**).

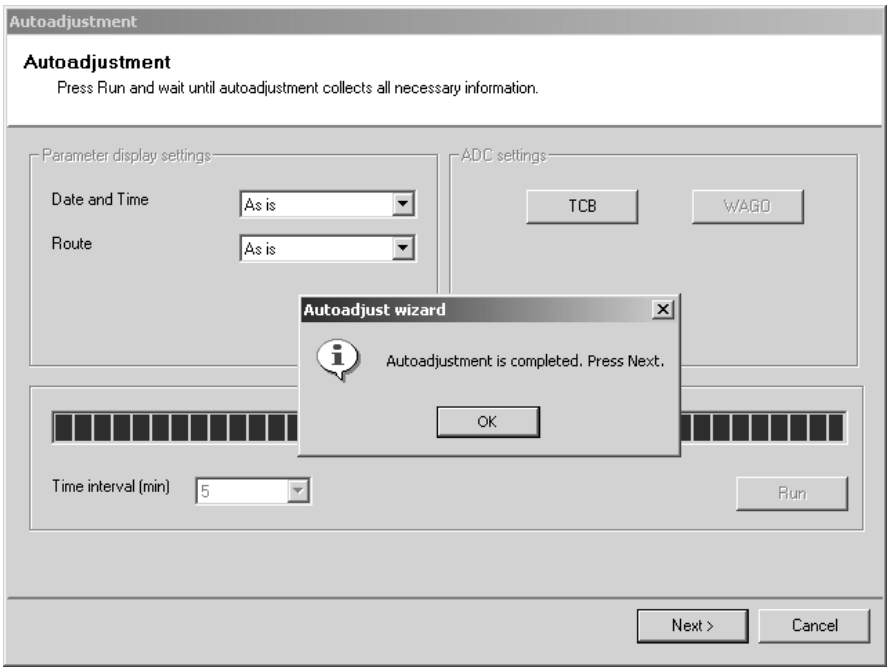
From **Route** drop-down list in **Parameter display settings** group, select the necessary route source:

- **2400** – Navi-Sailor 2400/2500 program;
- **3000 v3** – Navi-Sailor 3000 version 3.xx program;
- **3000 v4** – Navi-Sailor 3000 version 4.xx program;
- **As Is** – (in the case of the first adjustment – the default settings, see document **NAVI-CONNING 3000 (V. 4.01.00). USER MANUAL**, paragraph **Screen View Indicator Table**).

If Transas Conning Box unit configurations have not been made, and there has been no parameter setup, press “TCB” button and perform the adjustment (see **Annex A**, **Adjustment of NC Operation with Transas Conning Box** paragraph).

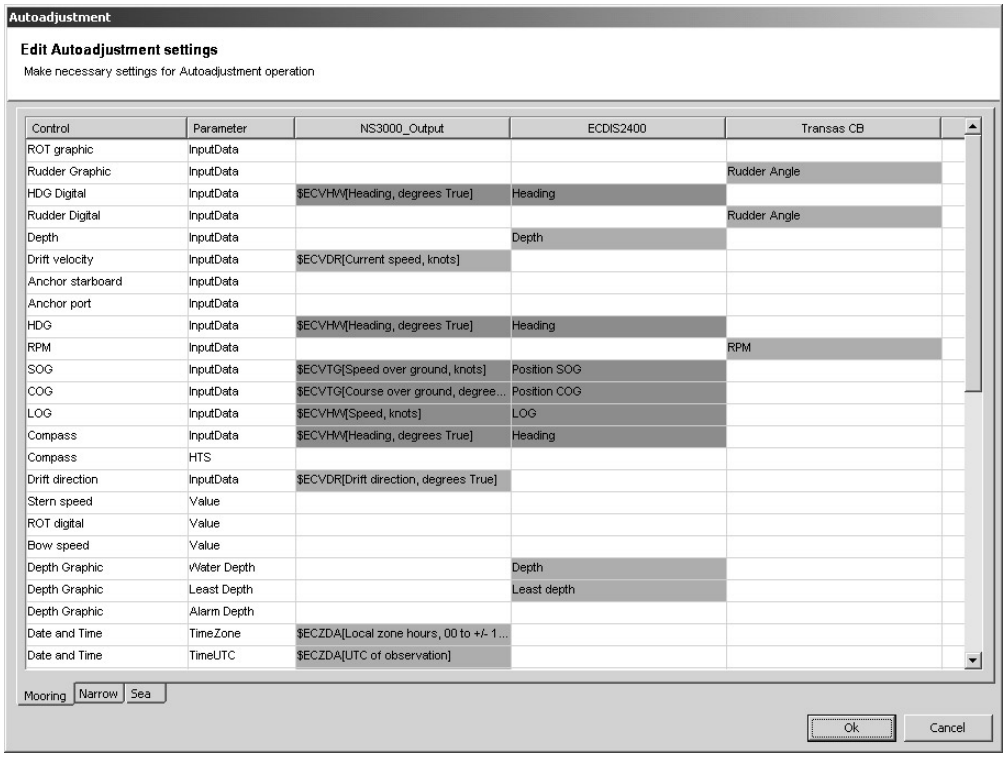
In the drop-down menu of **Time Interval (min)** window, set the time during which the NC program will be analysing the arriving data stream (it is advisable to set 5 minute interval).

Press “Run” button.



The progress bar displays the process of parameter flow analysis. When it is completed, press “OK” button in the information window which will appear.

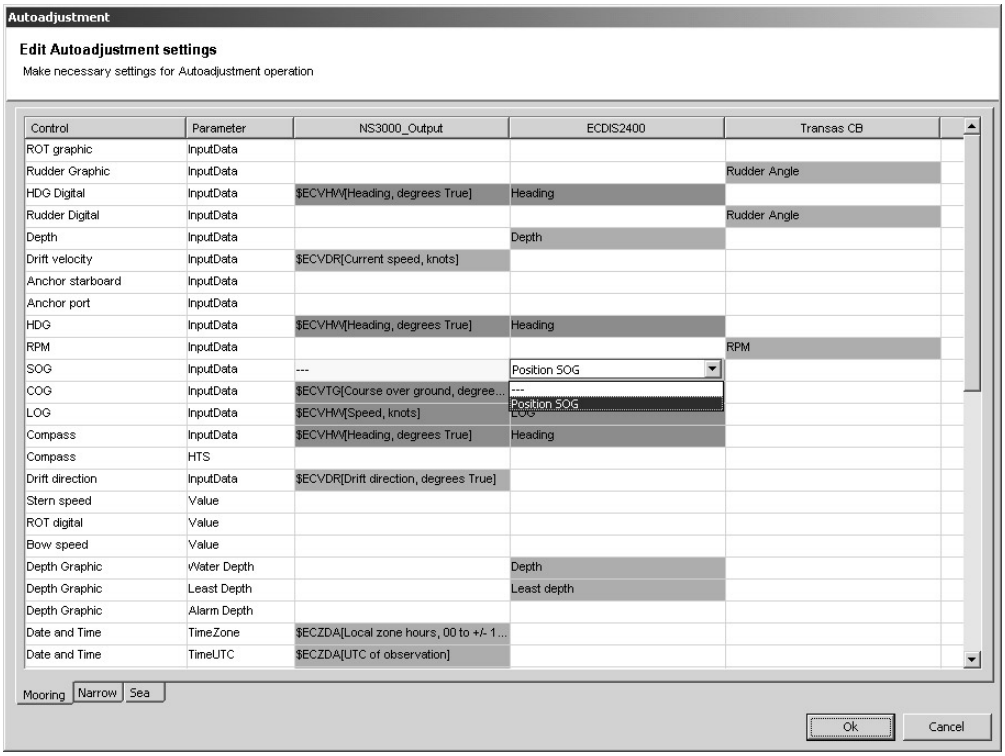
Press the activated “Next>” button.



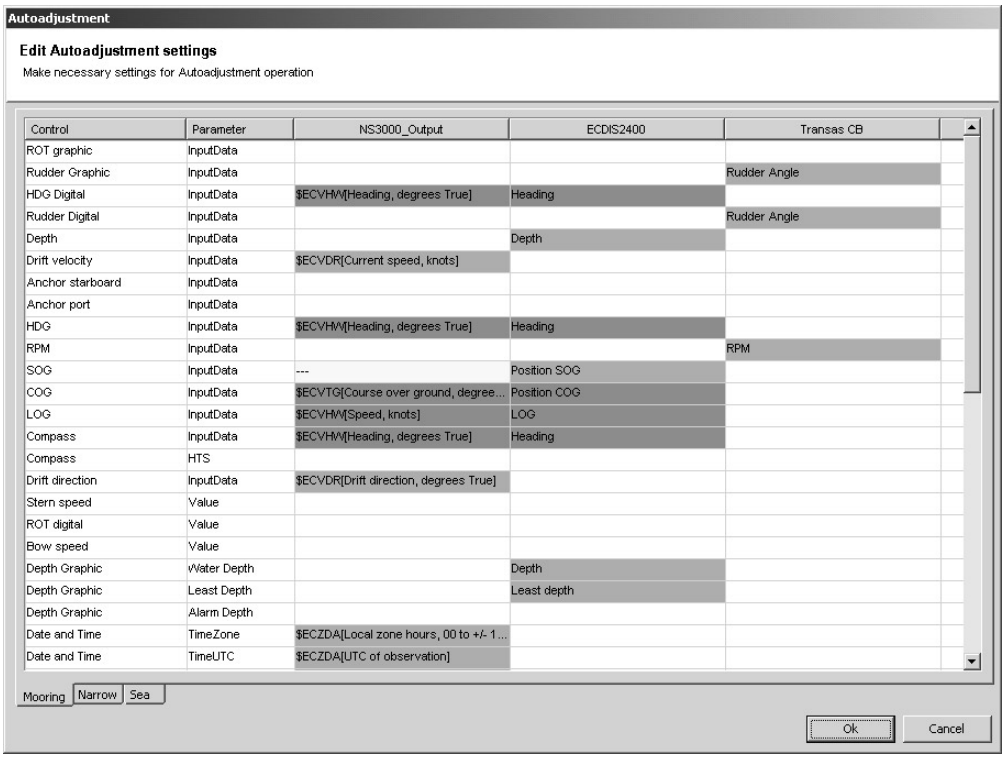
“Edit Auto Adjust settings” window which will open up, presents tables of settings for each Screen View, where the rows correspond to the Screen View indicators, and columns – to the set parameter sources. Screen Views are switched by using tabs in the bottom part of the window.

In the spaces next to the indicators in Settings table, parameters found for them in the process of analysis will be displayed. If a parameter from a single source is supplied to one indicator, the name of this parameter is shown on the green background. If the parameter is supplied by different sources, there is ambiguity. Such parameters are shown on the read background for all the sources which they are supplied by.

To eliminate ambiguity, select the cell in the column of that parameter source which should be connected to the indicator, and press the left trackball/mouse button.



In the drop-down list select the line with the name of the parameter which will be shown in the indicator.



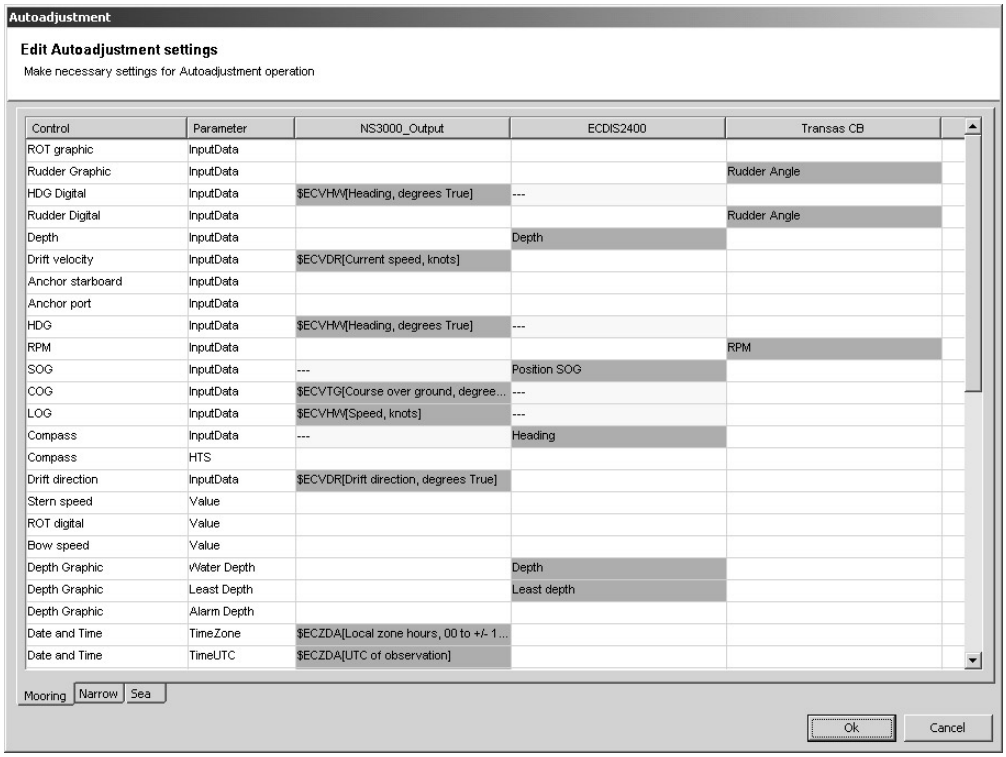
The rest of the parameter sources will be automatically disconnected from the indicator which is being adjusted. Their respective Settings table cells will be shown in the yellow colour.

Note: Where it is necessary to disconnect the unnecessary parameter in the process of adjustment, select "– – –" line from the drop-down list.

Eliminate ambiguity for all the parameter indicators. By switching tabs in the bottom part of the window, perform the aforementioned operations for all the Screen Views.

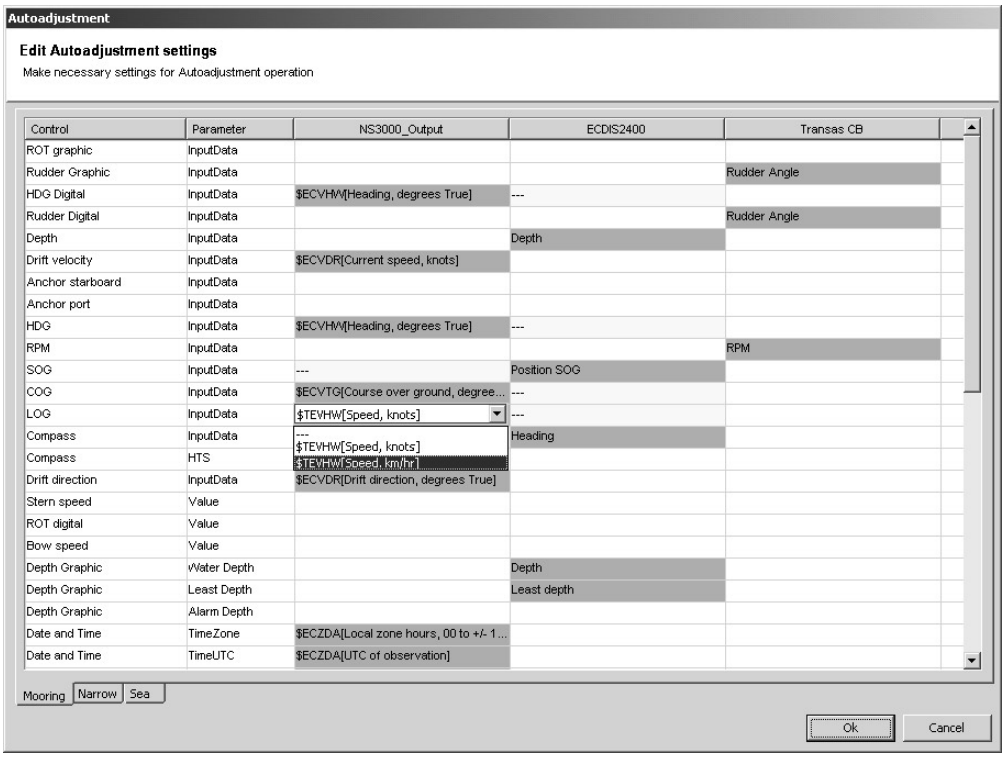
ATTENTION!

The program will not be able to complete the adjustment until ambiguity is eliminated for all the Screen View indicators (as long as there are some cells with red background).

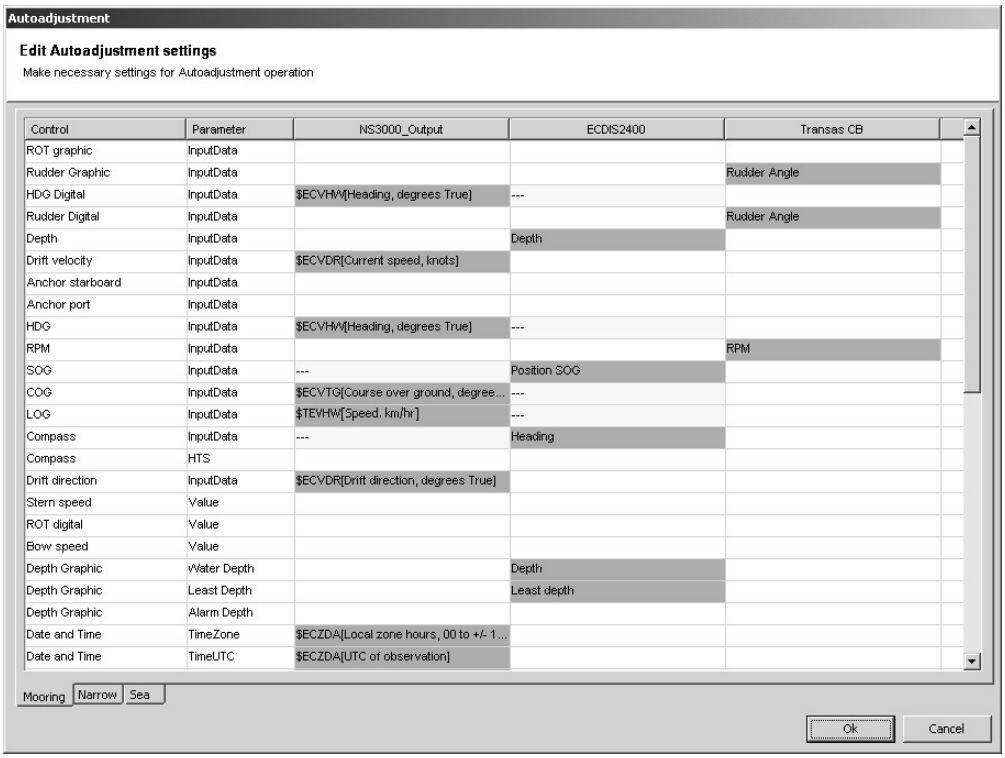


Parameters supplied by a single source can be contained in one or several sentences. If one suitable parameter is selected by program for the indicator which is being adjusted, its name and the name of the sentence which contains it are displayed in the cells in black. If several suitable parameters from a single source have been selected in the process of adjustment, their names and the names of the sentences which contain them are shown in the cells in blue.

In this case, the cell displays the first selected parameter. To select the parameter which will be used for the display on the indicator, position the cursor on the necessary cell and press the left trackball/mouse button.



Select the required parameter from the drop-down list. As this is done, the colour of the selected parameter name in the cell will not change.



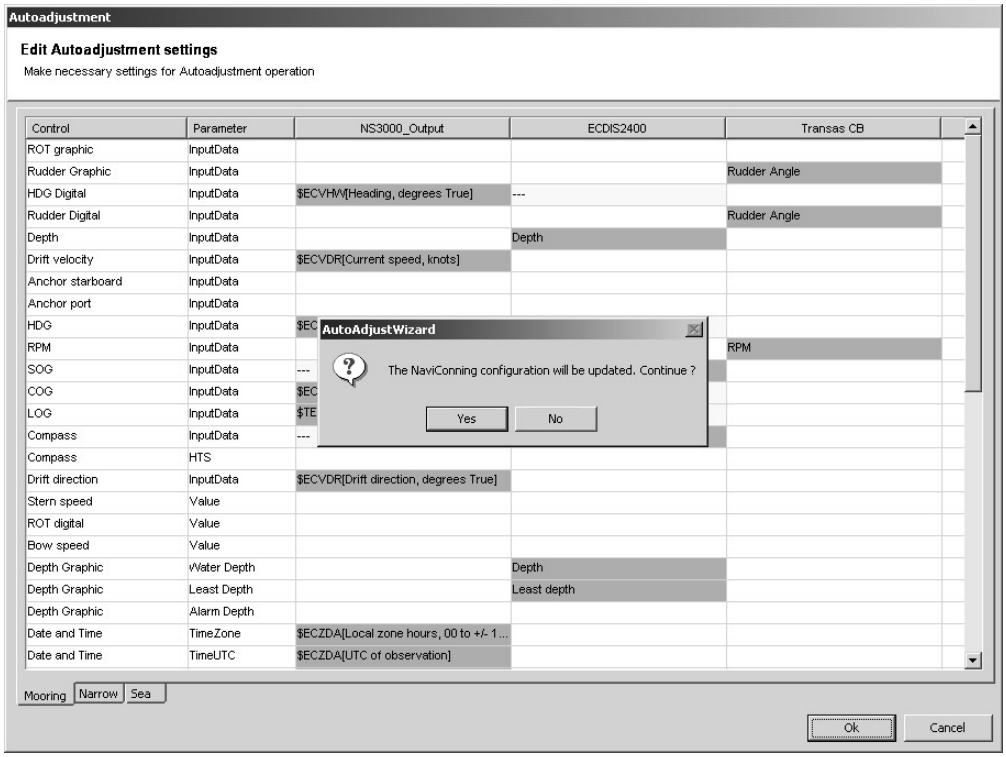
Select the necessary parameters for the indicators of all the Screen Views.

Press “OK” button to exit to the Main window of “Navi-Conning 3000 Setup” utility.

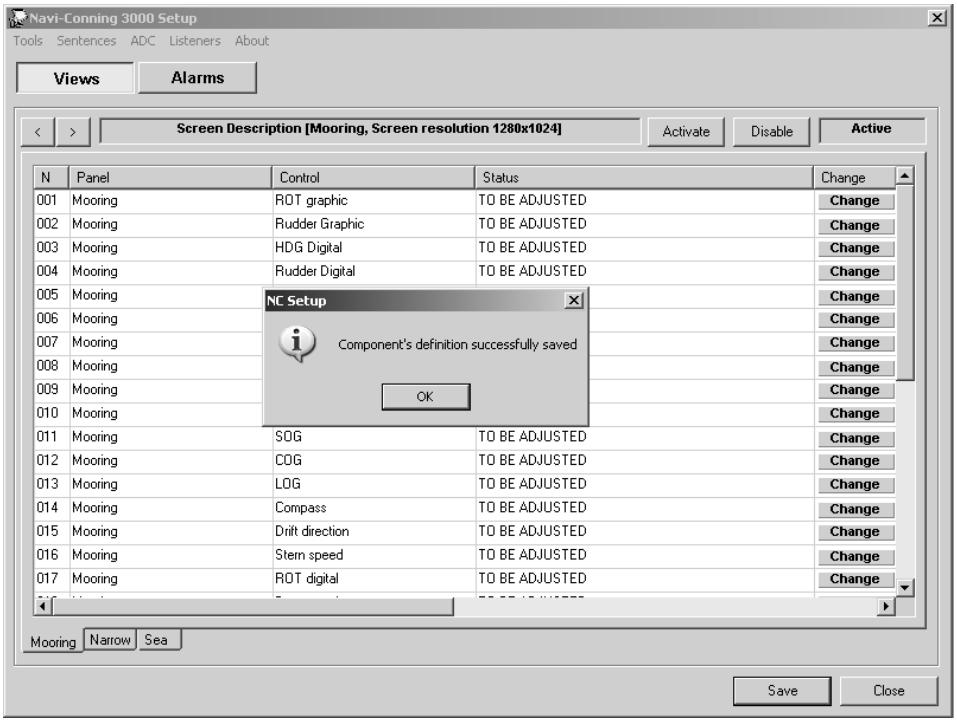
If ambiguity has not been eliminated for a certain parameter in the process of adjustment, the program will provide an appropriate warning.

Eliminate the ambiguity.

As ambiguity is eliminated for all the indicators in all the Screen Views, after a press on “OK” button, there will be a message with an offer to save the setup.



Press “Yes” button.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen Description [Mooring, Screen resolution 1280x1024]
Activate
Disable
Active
N Panel Control Status Change
001 Mooring ROT graphic TO BE ADJUSTED Change
002 Mooring Rudder Graphic TO BE ADJUSTED Change
003 Mooring HDG Digital TO BE ADJUSTED Change
004 Mooring Rudder Digital TO BE ADJUSTED Change
005 Mooring Change
006 Mooring Change
007 Mooring Change
008 Mooring Change
009 Mooring Change
010 Mooring Change
011 Mooring SOG TO BE ADJUSTED Change
012 Mooring COG TO BE ADJUSTED Change
013 Mooring LOG TO BE ADJUSTED Change
014 Mooring Compass TO BE ADJUSTED Change
015 Mooring Drift direction TO BE ADJUSTED Change
016 Mooring Stern speed TO BE ADJUSTED Change
017 Mooring ROT digital TO BE ADJUSTED Change
NC Setup
Component's definition successfully saved
OK
Mooring Narrow Sea
Save
Close

The system configuration will be saved. Press “OK” button.

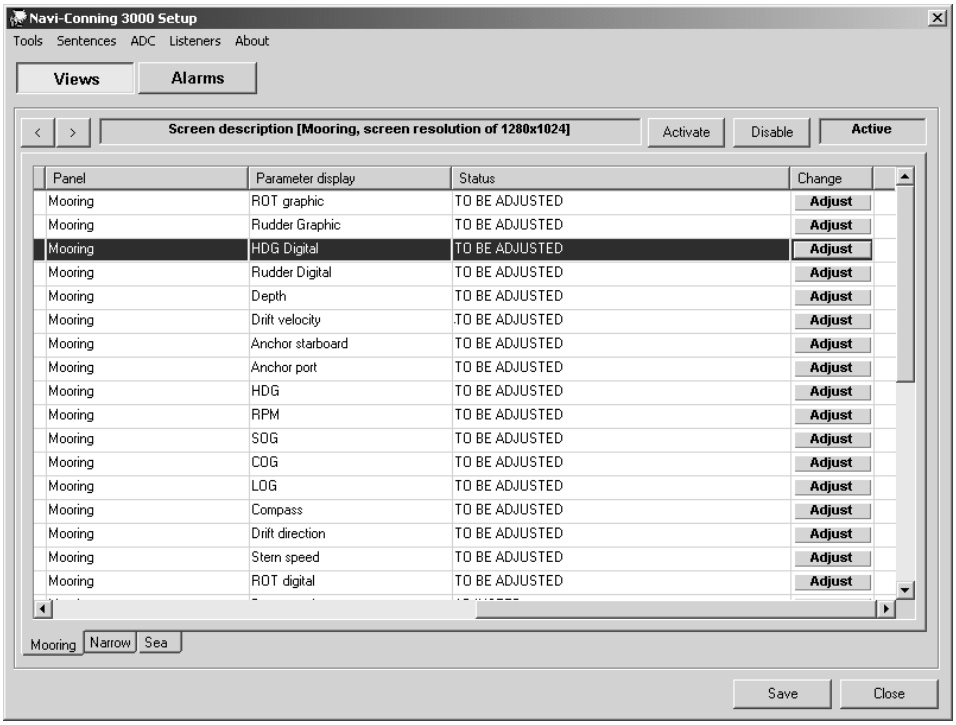
Manual Adjustment of Screen Views

For the indicators which parameters have not be connected to by means of the automatic adjustment facilities, manual adjustment should be made.

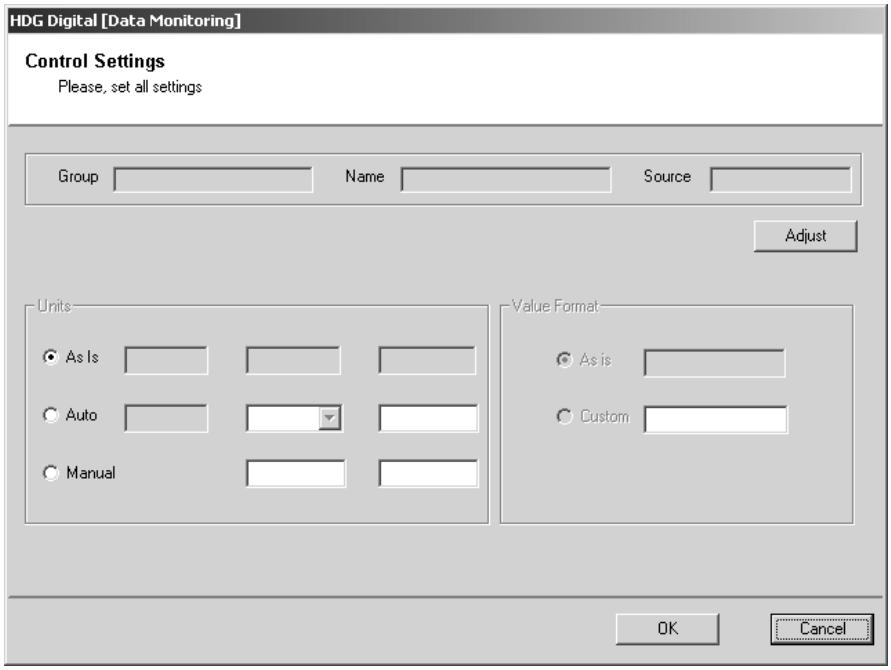
NMEA Interface

Use the tab in the bottom part of the utility’s Main window to switch to the required Screen View.

Select the indicator which the necessary parameter should be associated with.

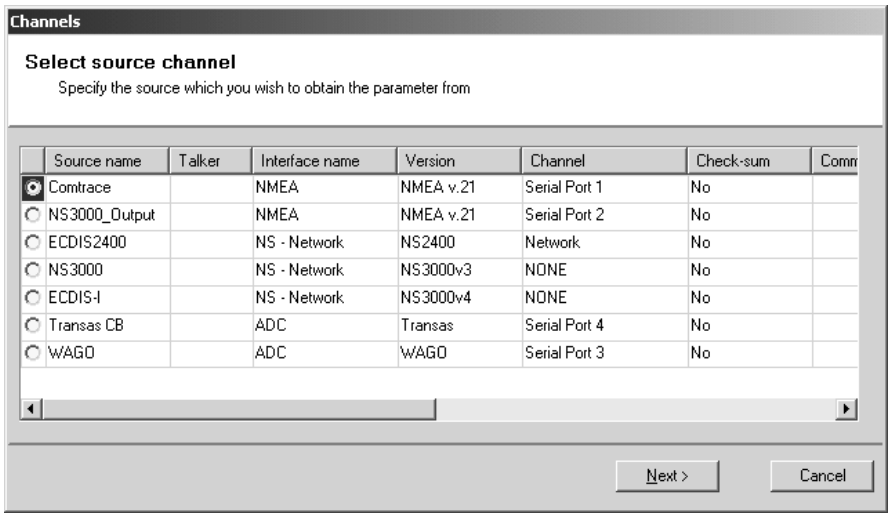

Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
Panel Parameter display Status Change
Mooring ROT graphic TO BE ADJUSTED Adjust
Mooring Rudder Graphic TO BE ADJUSTED Adjust
Mooring HDG Digital TO BE ADJUSTED Adjust
Mooring Rudder Digital TO BE ADJUSTED Adjust
Mooring Depth TO BE ADJUSTED Adjust
Mooring Drift velocity TO BE ADJUSTED Adjust
Mooring Anchor starboard TO BE ADJUSTED Adjust
Mooring Anchor port TO BE ADJUSTED Adjust
Mooring HDG TO BE ADJUSTED Adjust
Mooring RPM TO BE ADJUSTED Adjust
Mooring SOG TO BE ADJUSTED Adjust
Mooring COG TO BE ADJUSTED Adjust
Mooring LOG TO BE ADJUSTED Adjust
Mooring Compass TO BE ADJUSTED Adjust
Mooring Drift direction TO BE ADJUSTED Adjust
Mooring Stern speed TO BE ADJUSTED Adjust
Mooring ROT digital TO BE ADJUSTED Adjust
Mooring Narrow Sea
Save
Close

Press “Adjust” button in the selected indicator row.



In “Control Settings” window which will open up, press “Adjust” button.

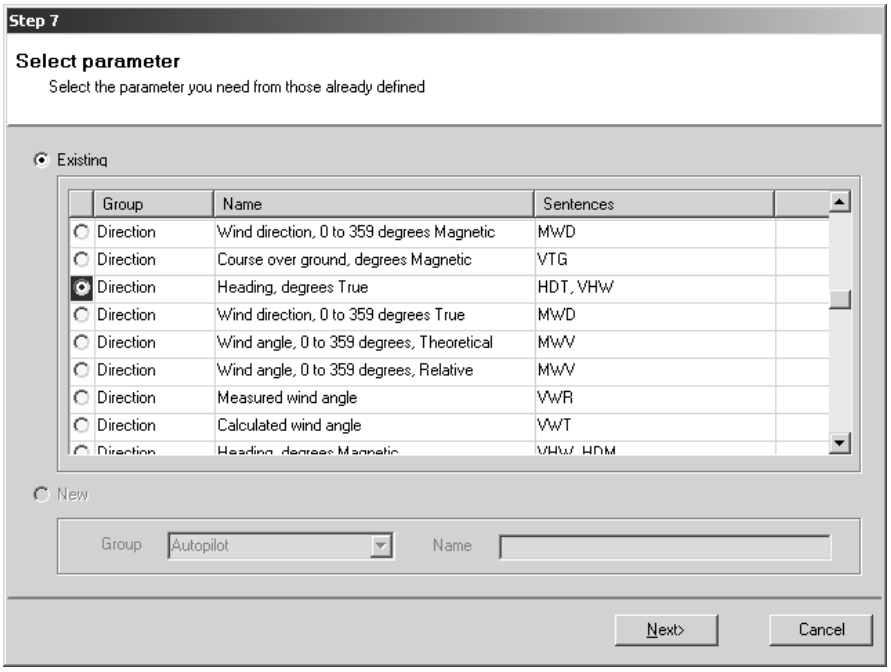
Select the necessary source of parameters.



Press “Next>” button.

Use the list to choose the parameter to be associated with the selected indicator.

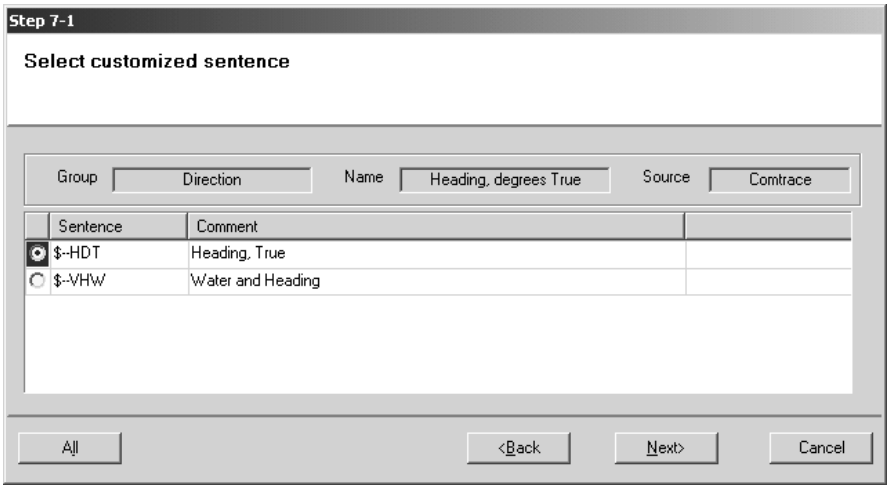
In this case, you will use the parameters database corresponding to the interface and its version for the selected source of parameters.



Press “Next>” button.

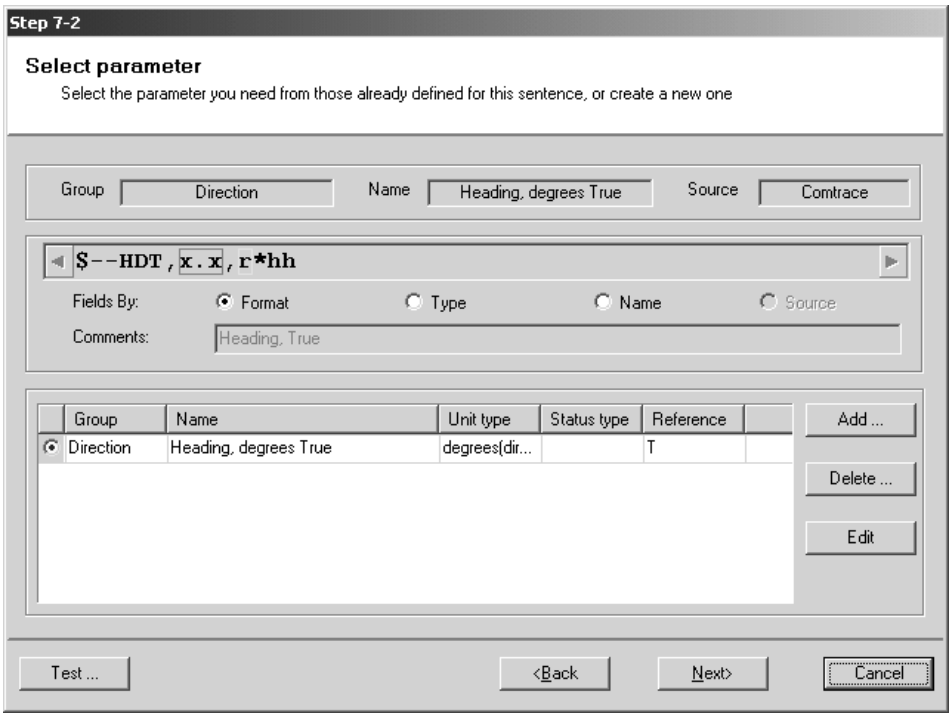
“Select customized sentence” window will display a list of sentences containing the required parameter.

Select the sentence which the required parameter will be extracted from.

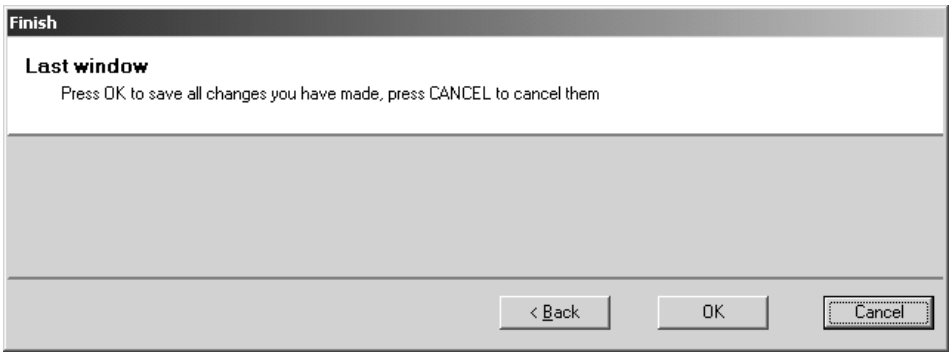


Press “Next>” button.

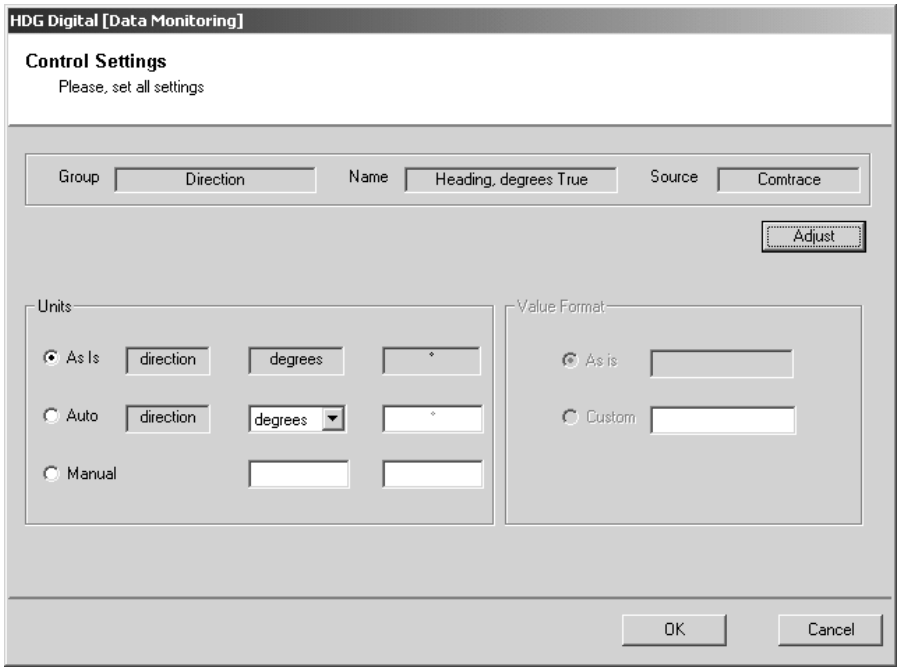
Confirm the selected parameter.



Press “Next>” button.



Press “OK” button to save the settings you have made.



Adjust the parameters display (see document **NAVI-CONNING 3000 (v. 4.01.00). USER MANUAL** paragraph **Parameters Display Setup**).

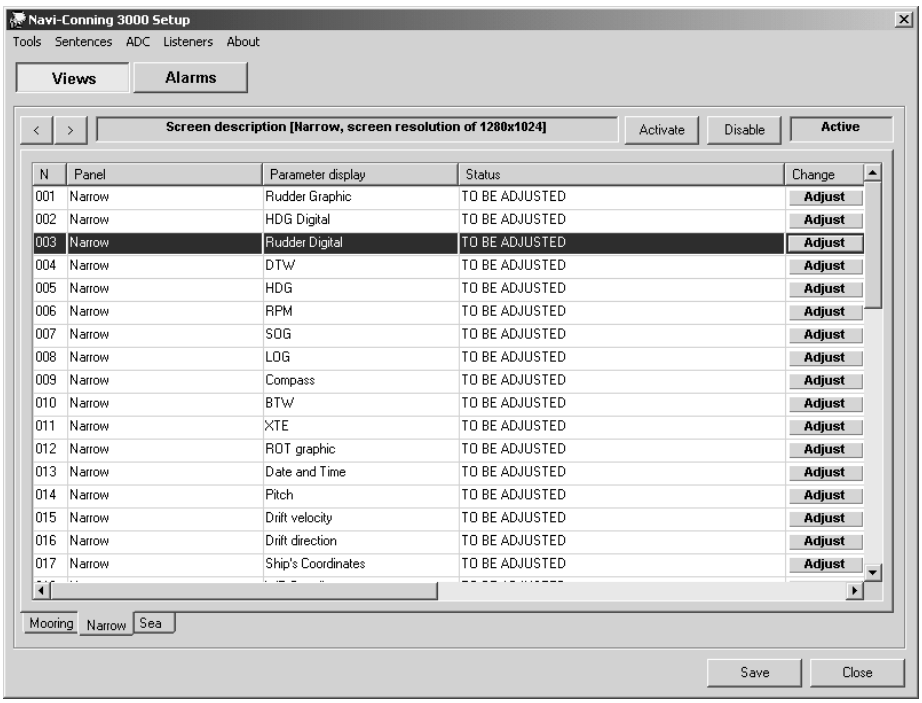
Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

Press “Save” button of “Navi-Conning 3000 Setup” utility’s Main window to save the changes you have made.

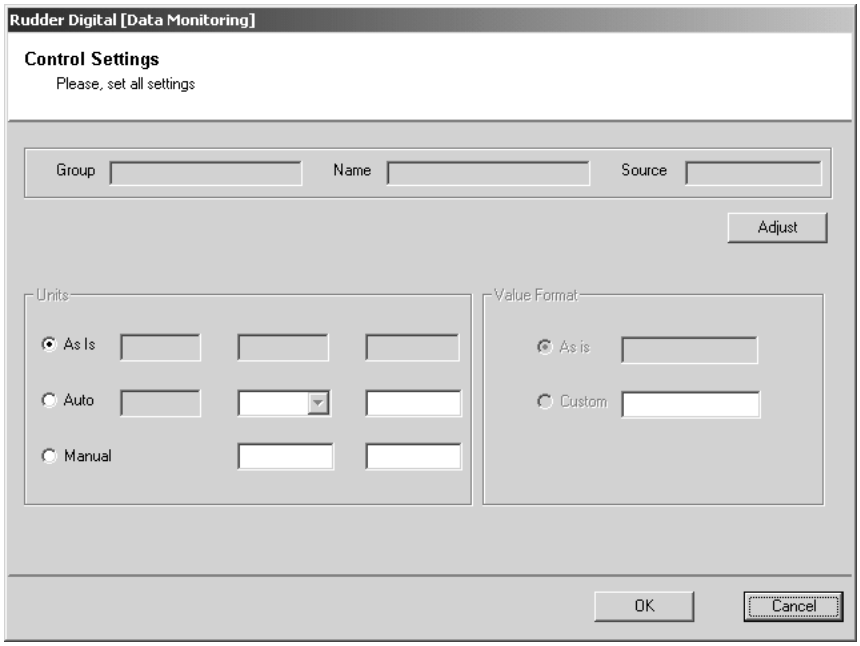
ADC Interface

Use the tab in the bottom part of the “Views” window to select to the required Screen View.

Select indicator which the required parameter should be associated with.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen description [Narrow, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Narrow Rudder Graphic TO BE ADJUSTED Adjust
002 Narrow HDG Digital TO BE ADJUSTED Adjust
003 Narrow Rudder Digital TO BE ADJUSTED Adjust
004 Narrow DTW TO BE ADJUSTED Adjust
005 Narrow HDG TO BE ADJUSTED Adjust
006 Narrow RPM TO BE ADJUSTED Adjust
007 Narrow SOG TO BE ADJUSTED Adjust
008 Narrow LOG TO BE ADJUSTED Adjust
009 Narrow Compass TO BE ADJUSTED Adjust
010 Narrow BTW TO BE ADJUSTED Adjust
011 Narrow XTE TO BE ADJUSTED Adjust
012 Narrow ROT graphic TO BE ADJUSTED Adjust
013 Narrow Date and Time TO BE ADJUSTED Adjust
014 Narrow Pitch TO BE ADJUSTED Adjust
015 Narrow Drift velocity TO BE ADJUSTED Adjust
016 Narrow Drift direction TO BE ADJUSTED Adjust
017 Narrow Ship's Coordinates TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

Press “Adjust” button in the selected indicator row.



In “Control Settings” window which will open up, press “Adjust” button:

1. Transas CB.

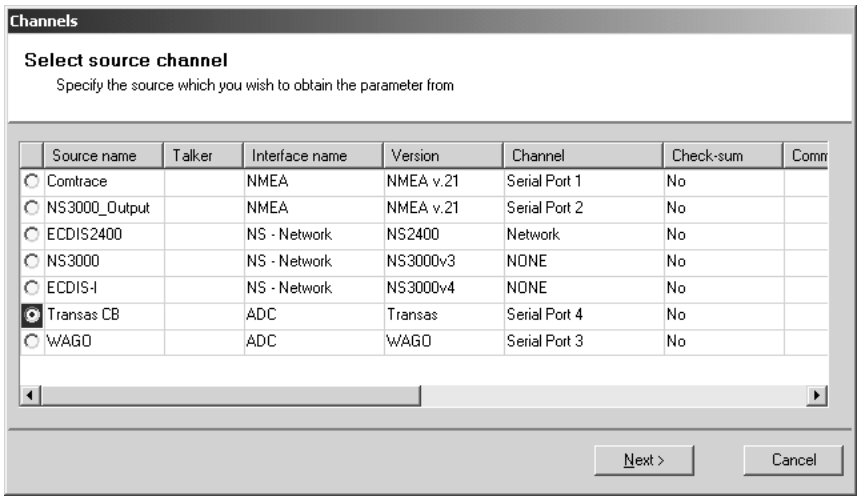
ATTENTION!

For the connection of parameters supplied by Transas CB, it is necessary that Transas CB configuration should be set (see **Annex A** paragraph **Adjustment of NC Operations with Transas Conning Box**).

Select Transas Conning Box for the source of parameters.

ATTENTION!

If there is no necessary source of parameters on the list, press “Cancel” button to exit from the setup wizard and add the required source by using *Tools\Settings\ Sources* option of the utility’s Main menu (see paragraph **Setting of Parameter Sources**).

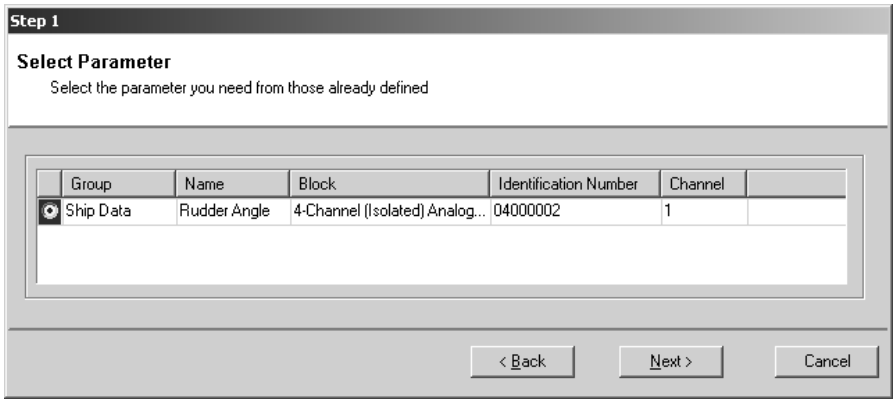


Press “Next>” button.

Select a parameter from the list which will be associated with the selected indicator.

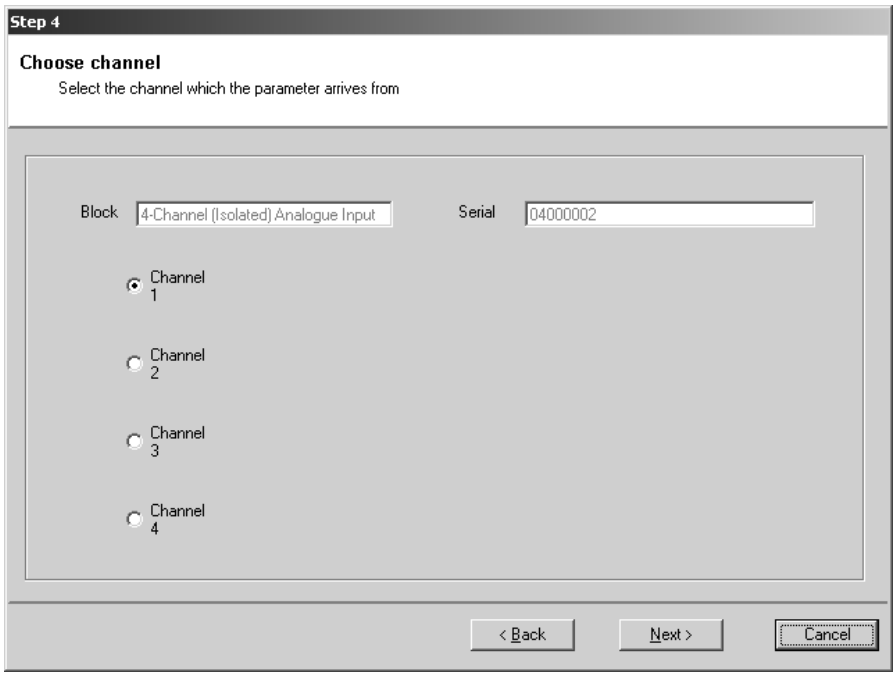
ATTENTION!

If the necessary parameter is not on the list, add it by using Transas Conning Box Setup Wizard (see **Annex A** paragraph **Adjustment of NC Operation with Transas Conning Box**).



Press “Next>” button.

Select the channel of the Conning Box unit which the parameter is supplied by.



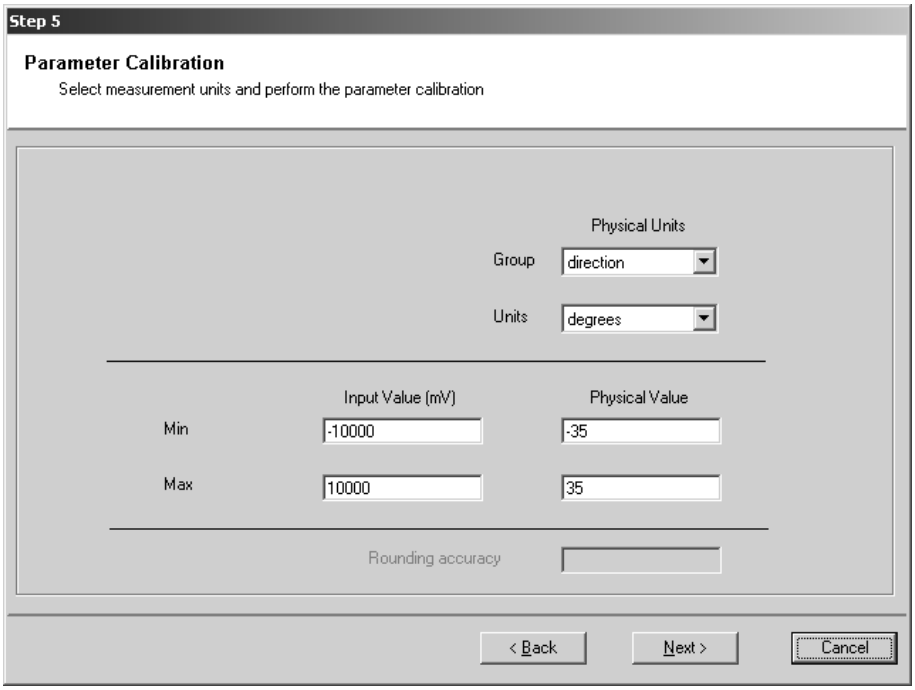
Press “Next>” button.

Select the parameter group and measurement units from the pertinent lists. Use Input Value column to set the maximum and minimum value (of current, voltage, etc.) which is supplied to the ADC and corresponds to the maximum and minimum parameter value.

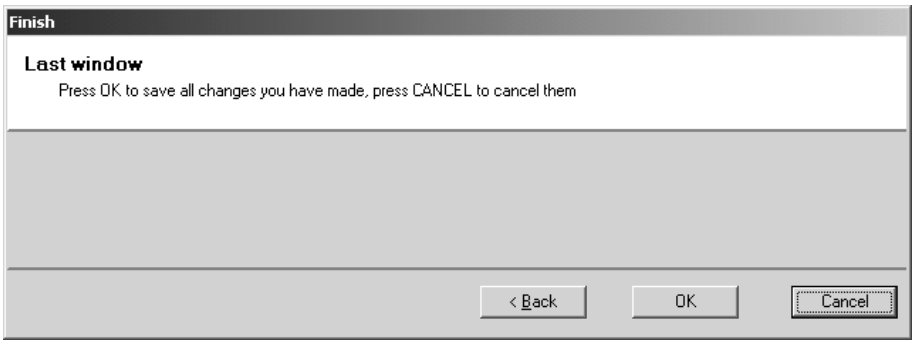
ATTENTION!

In **Input Value** column, the voltage value is required to be set in millivolts (10V are specified as 10000), whereas the current value should be specified in microamperes (for 4 mA 4000 is specified).

In **Physical Value** column, set the minimum and maximum physical value of the associated parameter.



Press “Next>” button.



Press “OK” button to save the settings you have made.

2. WAGO CB.

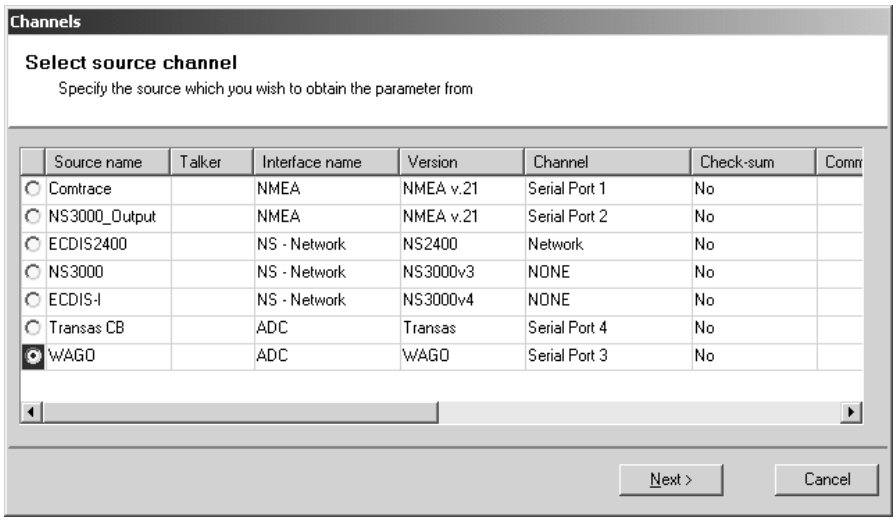
ATTENTION!

For the connection of parameters supplied by WAGO CB, it is necessary that WAGO CB configuration should be set (see **Annex A** paragraph **Adjustment of NC Operations with WAGO Conning Box**).

Select WAGO Conning Box for the source of parameters.

ATTENTION!

In the absence of the required parameter source in the table, press “Cancel” button to exit from the setup wizard and add the required source by using *Tools\Settings\Sources* option of the utility’s Main menu (see paragraph **Setting of Parameter Sources**).

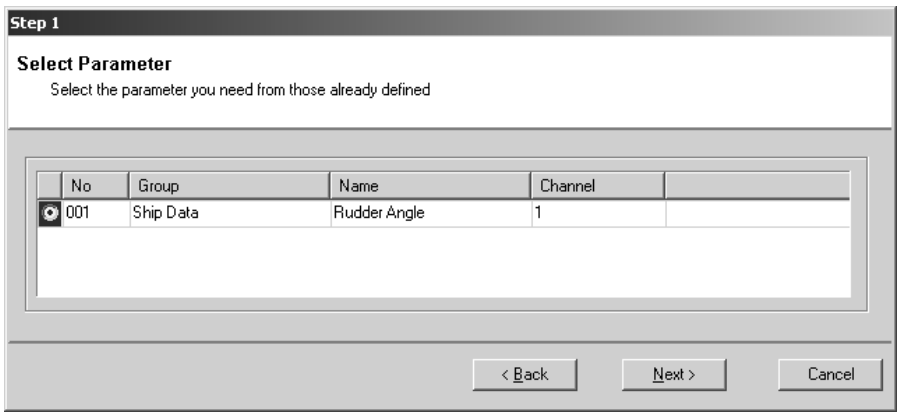


Press “Next>” button.

Select a parameter from the list, which will be associated with the selected indicator.

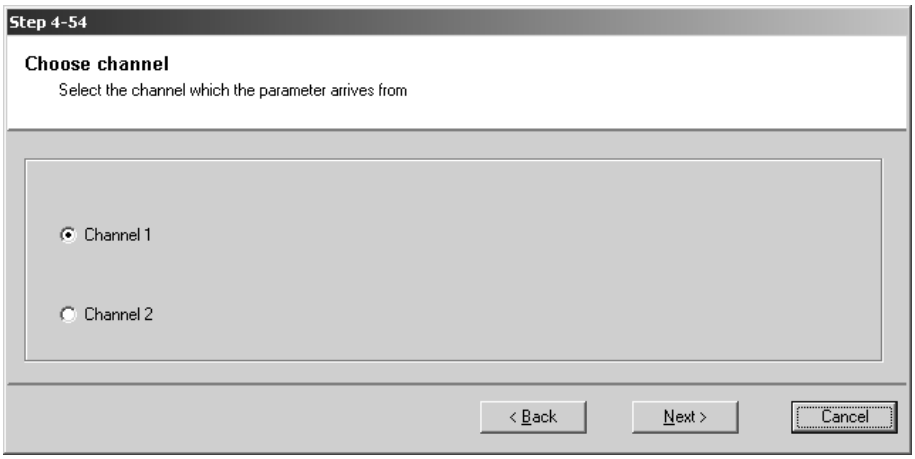
ATTENTION!

If the necessary parameter is not on the list, add it by using WAGO Conning Box Setup Wizard (see **Annex A** paragraph **Adjustment of NC Operation with WAGO Conning Box**).



Press “Next>” button.

Select the channel of the Conning Box unit which the parameter is supplied by.



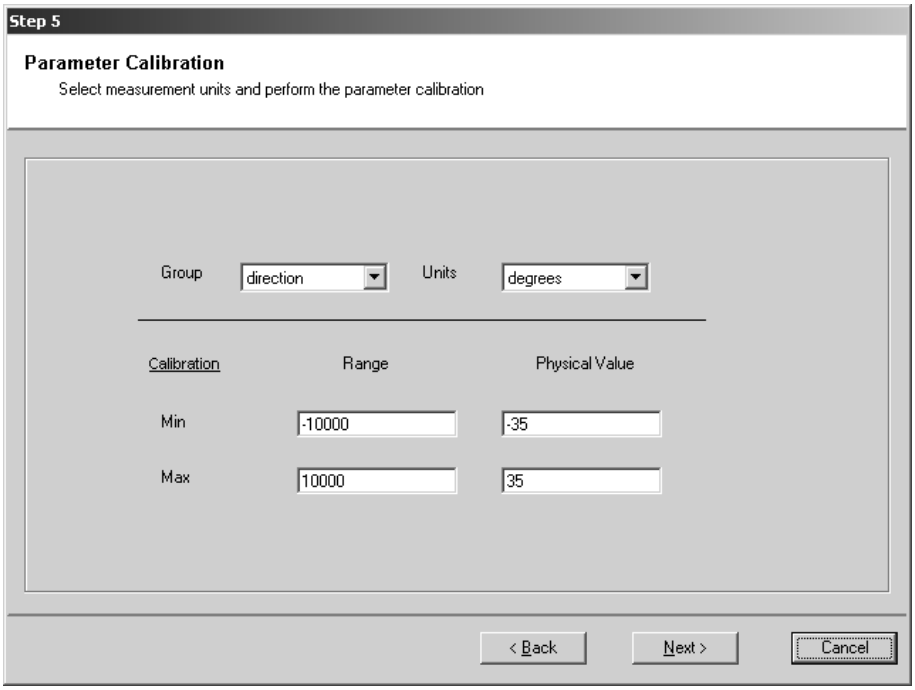
Press “Next>” button.

Select the parameter group and measurement units from the pertinent lists. Use Range column to set the maximum and minimum value (of current, voltage, etc.) which is supplied to the ADC and corresponds to the maximum and minimum parameter value.

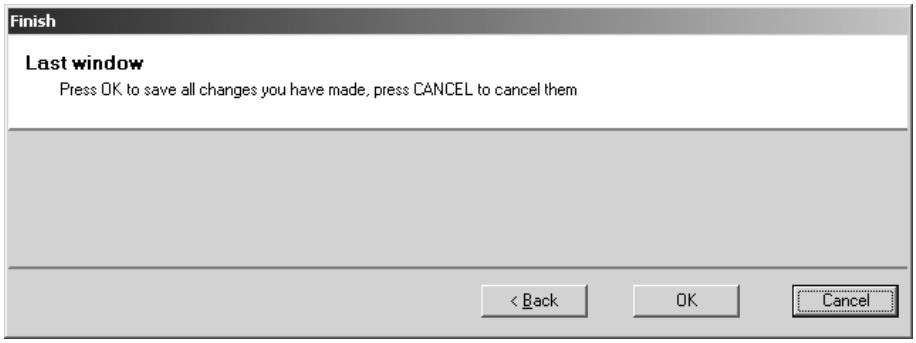
ATTENTION!

In **Range** column, the voltage value is required to be set in millivolts (10V are specified as 10000), whereas the current value should be specified in microamperes (for 4 mA 4000 is specified).

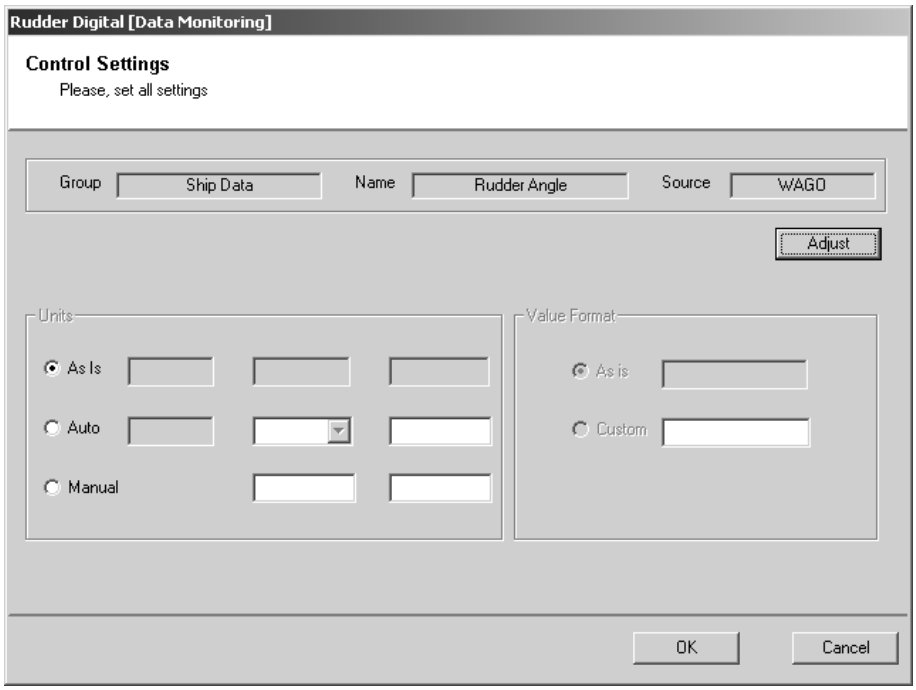
In Physical Value column, set the minimum and maximum physical value of the associated parameter.



Press “Next>” button.



Press “OK” button to confirm the settings you have made.



Adjust the parameters display (see document **NAVI-CONNING 3000 (V. 4.01.00). USER MANUAL** paragraph **Parameters Display Setup**).

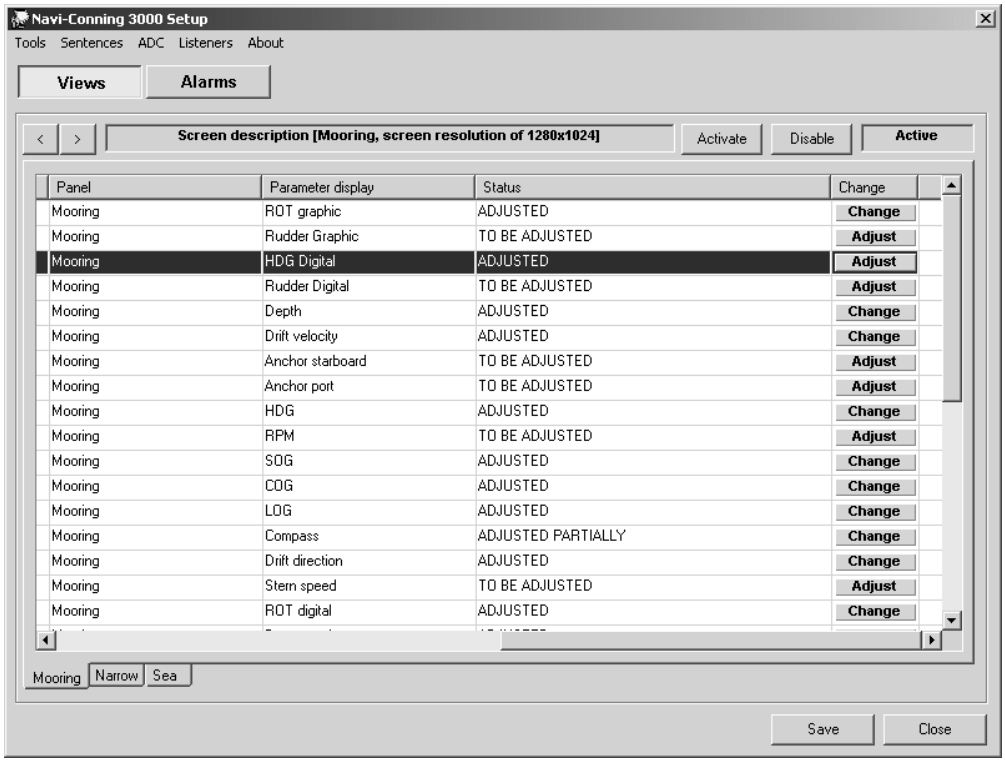
Press “Ok” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

Press “Save” button in “Navi-Conning 3000 Setup” utility’s Main window to save the changes you have made.

Network

Use the tab in the bottom part of the utility's Main window to switch to the required Screen View.

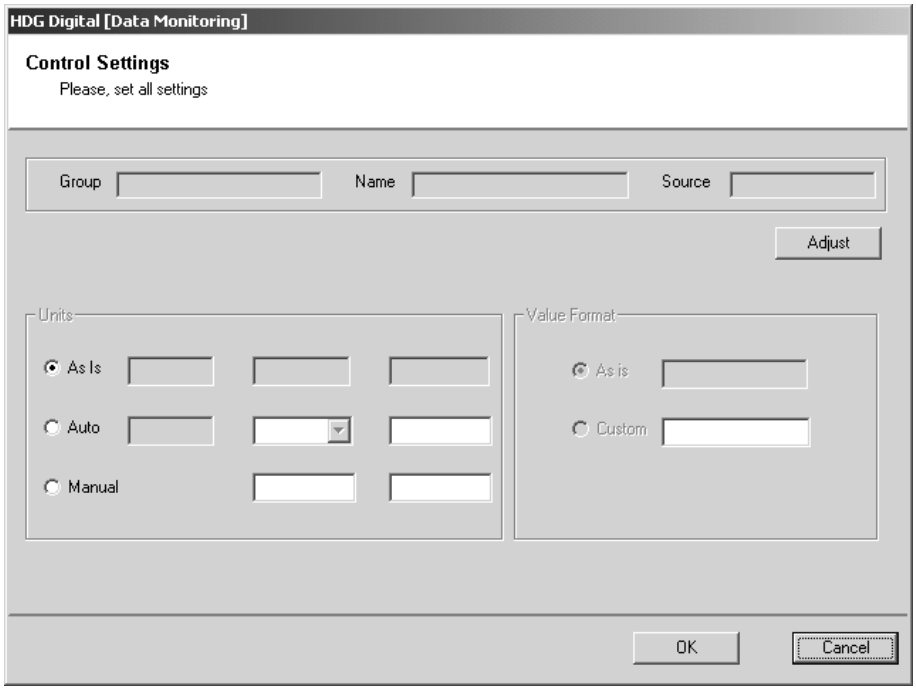
Select indicator which the required parameter should be associated with.



Press "Adjust" button in the selected indicator row.

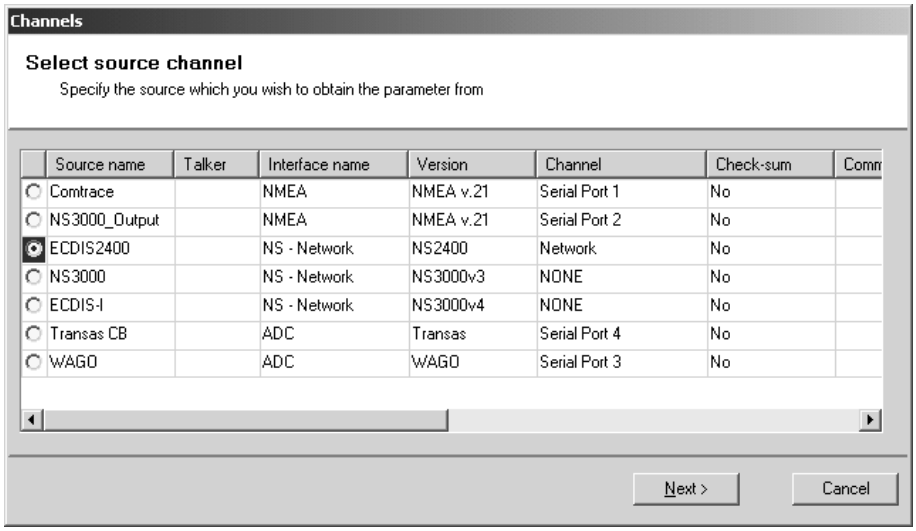
ATTENTION!

The network provides parameters with measurement units set by default (see document **NAVI-CONNING 3000 (V. 4.01.00). USER MANUAL** paragraph **Screen View Indicator Table**), these are not re-calculated when displayed in a Screen View.



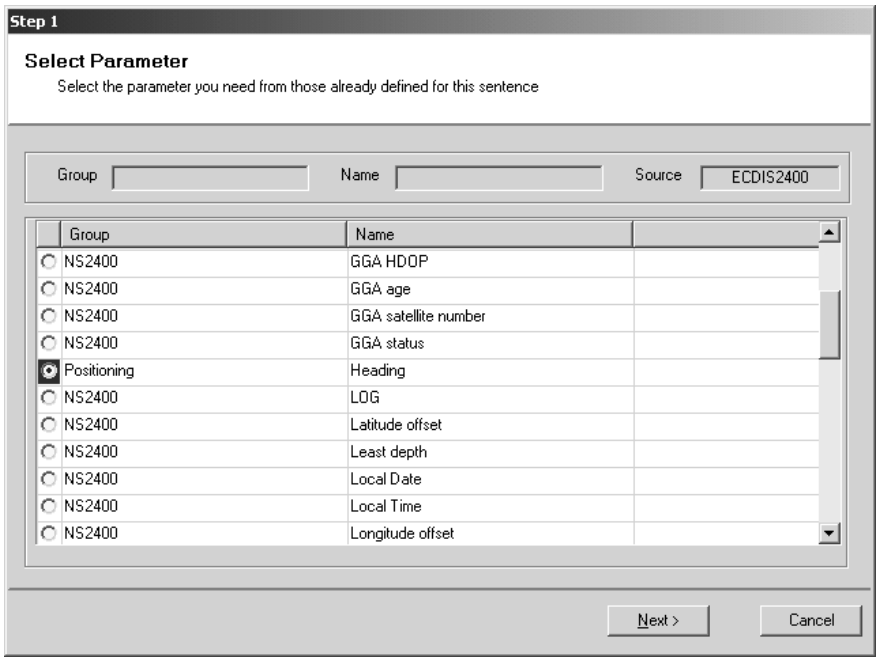
Press “Adjust” button.

Select the source of parameters using a network interface.

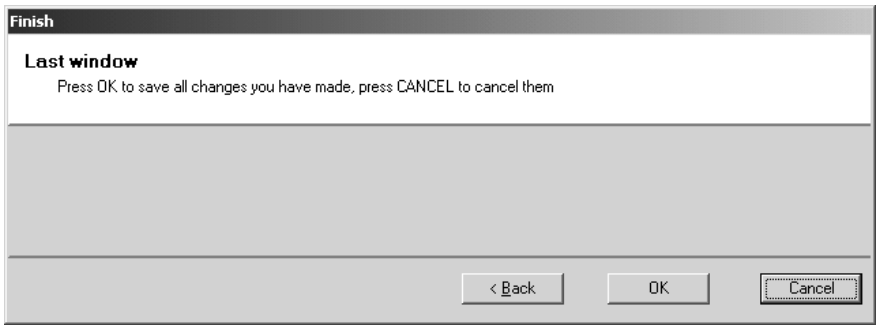


Press “Next>” button.

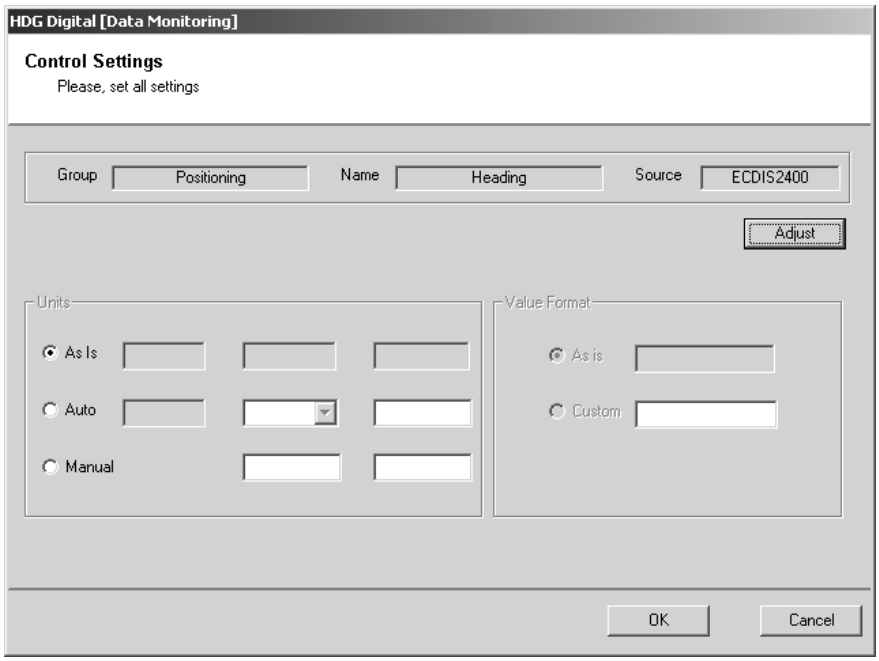
Use the list to select the parameter which will be associated with the selected indicator.



Press “Next>” button.



Press “OK” button to confirm the settings you have made.

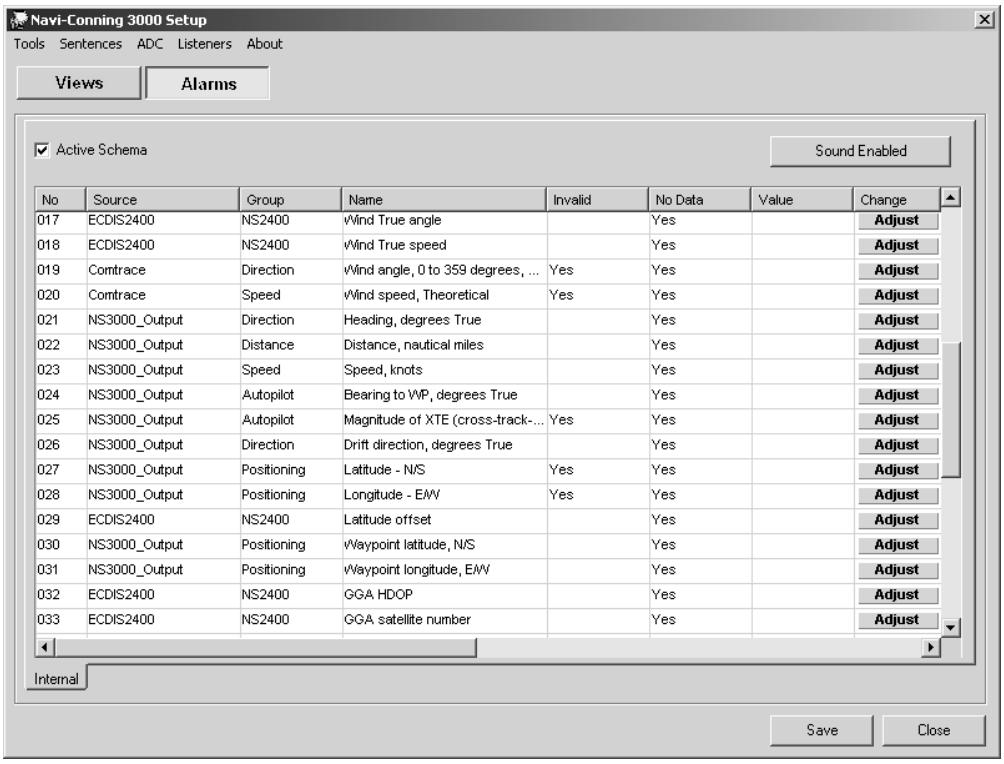


Press “OK” button to exit to the Main window of “Navi Conning 3000 Setup” utility.

Press “Save” button in “Navi-Conning 3000 Setup” utility’s Main window to save the changes you have made.

Adjustment of Alarm Generation

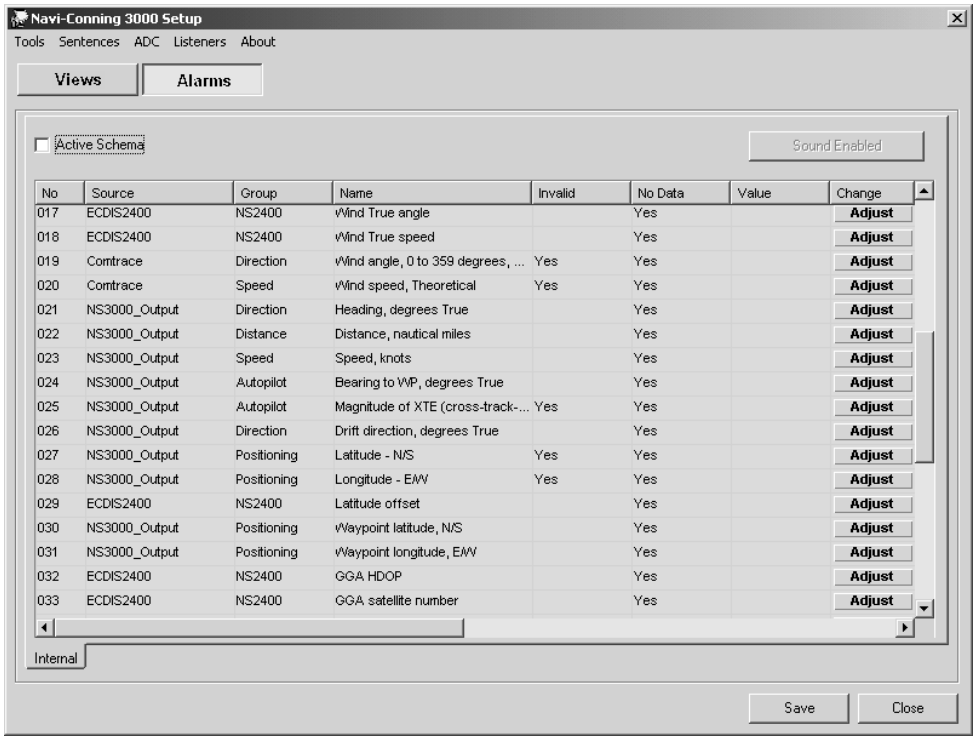
Use **Alarms** button in the top left corner of the Main window to switch to the window for the alarm generation adjustment.



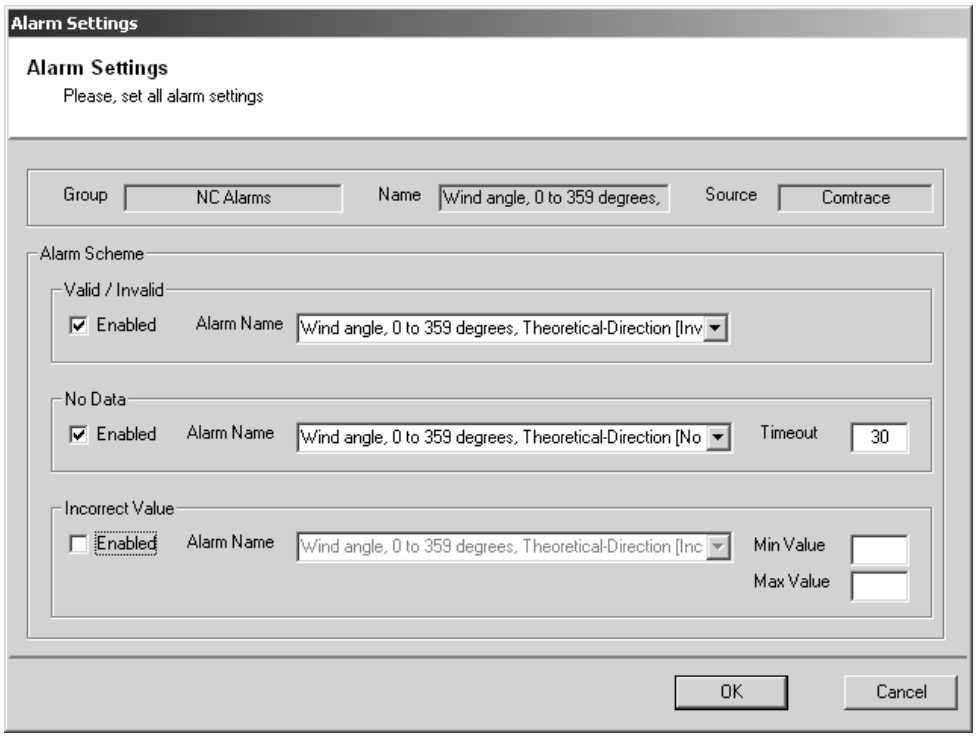
No	Source	Group	Name	Invalid	No Data	Value	Change
017	ECDIS2400	NS2400	Wind True angle		Yes		Adjust
018	ECDIS2400	NS2400	Wind True speed		Yes		Adjust
019	Comtrace	Direction	Wind angle, 0 to 359 degrees, ...	Yes	Yes		Adjust
020	Comtrace	Speed	Wind speed, Theoretical	Yes	Yes		Adjust
021	NS3000_Output	Direction	Heading, degrees True		Yes		Adjust
022	NS3000_Output	Distance	Distance, nautical miles		Yes		Adjust
023	NS3000_Output	Speed	Speed, knots		Yes		Adjust
024	NS3000_Output	Autopilot	Bearing to WP, degrees True		Yes		Adjust
025	NS3000_Output	Autopilot	Magnitude of XTE (cross-track-...	Yes	Yes		Adjust
026	NS3000_Output	Direction	Drift direction, degrees True		Yes		Adjust
027	NS3000_Output	Positioning	Latitude - N/S	Yes	Yes		Adjust
028	NS3000_Output	Positioning	Longitude - E/W	Yes	Yes		Adjust
029	ECDIS2400	NS2400	Latitude offset		Yes		Adjust
030	NS3000_Output	Positioning	Waypoint latitude, N/S		Yes		Adjust
031	NS3000_Output	Positioning	Waypoint longitude, E/W		Yes		Adjust
032	ECDIS2400	NS2400	GGA HDOP		Yes		Adjust
033	ECDIS2400	NS2400	GGA satellite number		Yes		Adjust

The alarm layout shows all the adjusted parameters displayed on the active Screen Views. The default setting for each parameter is the alarm generated by its absence (“No Data” column). For the parameters which have a status, the default setting is the alarm generates by the arrival of unreliable data (“Invalid” column). The alarm triggering off by the parameter value (“Value” column) is, by default, turned off for all the parameters. The name of alarms shown on the alarm layout corresponds to the parameter name.

If necessary to turn off the alarm generation for all the parameters, uncheck **Active Scheme** checkbox.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Active Schema
Sound Enabled
No Source Group Name Invalid No Data Value Change
017 ECDIS2400 NS2400 Wind True angle Yes Adjust
018 ECDIS2400 NS2400 Wind True speed Yes Adjust
019 Comtrace Direction Wind angle, 0 to 359 degrees, ... Yes Yes Adjust
020 Comtrace Speed Wind speed, Theoretical Yes Yes Adjust
021 NS3000_Output Direction Heading, degrees True Yes Adjust
022 NS3000_Output Distance Distance, nautical miles Yes Adjust
023 NS3000_Output Speed Speed, knots Yes Adjust
024 NS3000_Output Autopilot Bearing to WP, degrees True Yes Adjust
025 NS3000_Output Autopilot Magnitude of XTE (cross-track-... Yes Yes Adjust
026 NS3000_Output Direction Drift direction, degrees True Yes Adjust
027 NS3000_Output Positioning Latitude - N/S Yes Yes Adjust
028 NS3000_Output Positioning Longitude - E/W Yes Yes Adjust
029 ECDIS2400 NS2400 Latitude offset Yes Adjust
030 NS3000_Output Positioning Waypoint latitude, N/S Yes Adjust
031 NS3000_Output Positioning Waypoint longitude, E/W Yes Adjust
032 ECDIS2400 NS2400 GGA HDOP Yes Adjust
033 ECDIS2400 NS2400 GGA satellite number Yes Adjust
Internal
Save
Close

To change the alarm generation for the necessary parameter, press “Adjust” button in the line with this parameter name (**Active Scheme** checkbox should be checked).

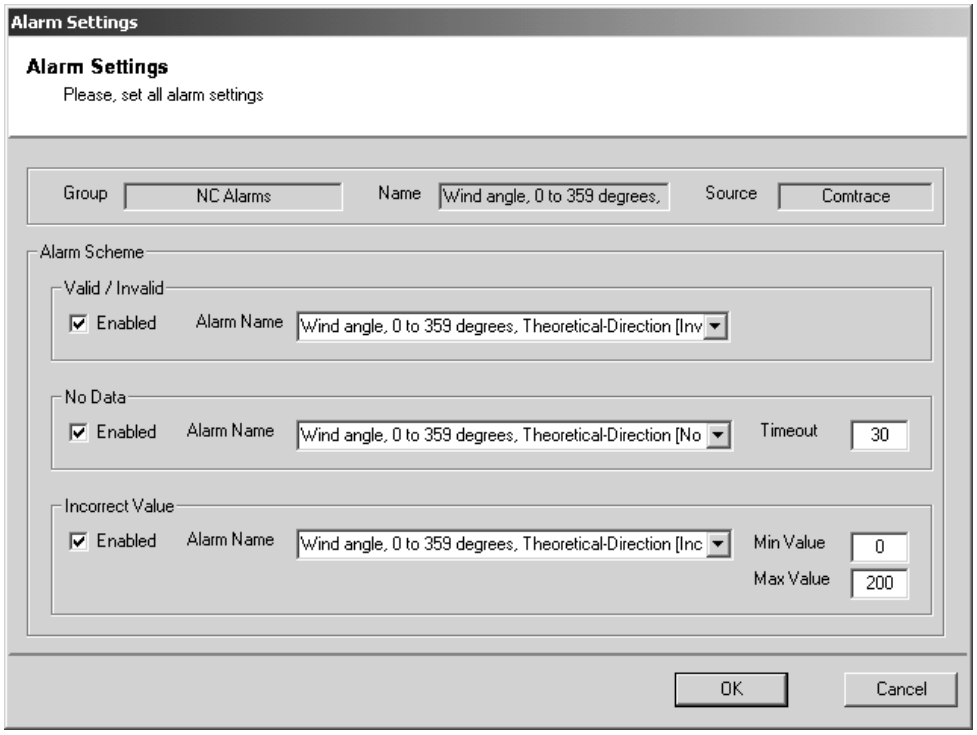


For the parameters which have “status” characteristic, **Enabled** checkbox of **Valid/Invalid** group is checked by default, so with the arrival of invalid data, an appropriate alarm is triggered off.

By default, **Enabled** checkbox of **No Data** group is checked for all parameters, this is why with the data absent during the set time interval, an alarm is generated. Use **Timeout** input box to set the necessary time interval whereupon an alarm will be generated by the absence of data.

To disable the alarm generation for the parameter which is being adjusted, uncheck the corresponding checkbox.

To turn on the alarm generation upon the arrival of parameter values beyond the set range, check **Enabled** checkbox of **Incorrect Value** group. Use **Min Value** input box to set the minimum physical parameter value, use **Max Value** input box to specify the maximum physical parameter value. With the arrival of a parameter whose value is not within the set interval, an alarm is generated.



ATTENTION!

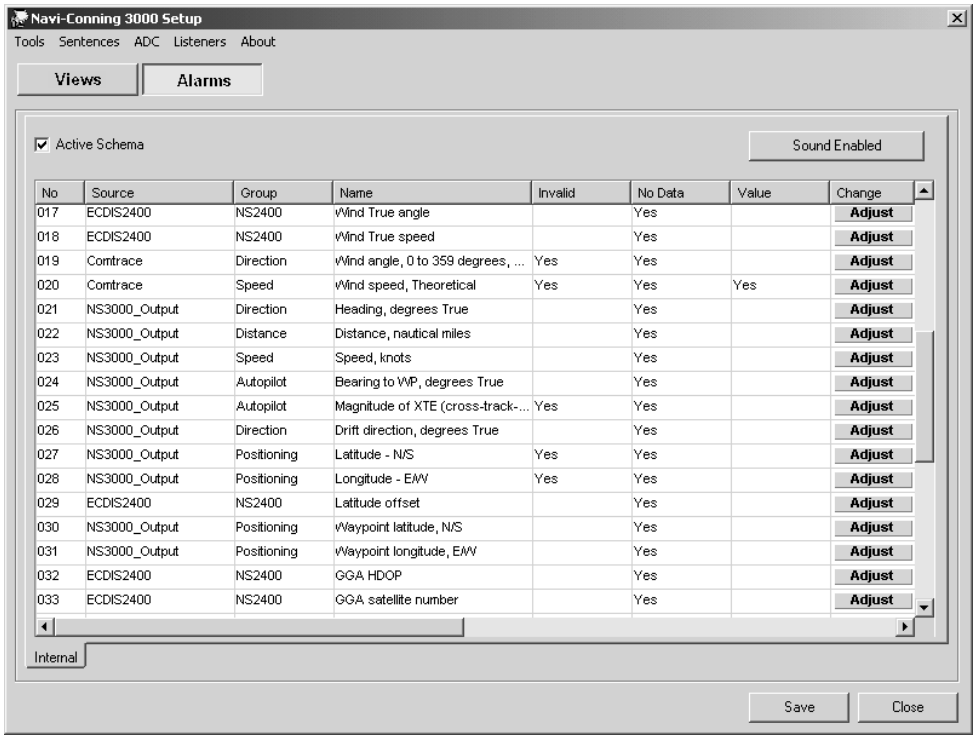
By default, alarm messages associated with the alarm generation are grouped according to their functionality. The name of the group (**Alarms Name**) will be displayed in the Navi-Conning Screen Views with the generation of any of the alarms it includes. If the parameter name is not included in any of the groups, with the generation of an alarm, it will be displayed on the Navi-Conning Screen Views.

Use **Alarm Name** lines to enter the necessary name of an alarm message.

ATTENTION!

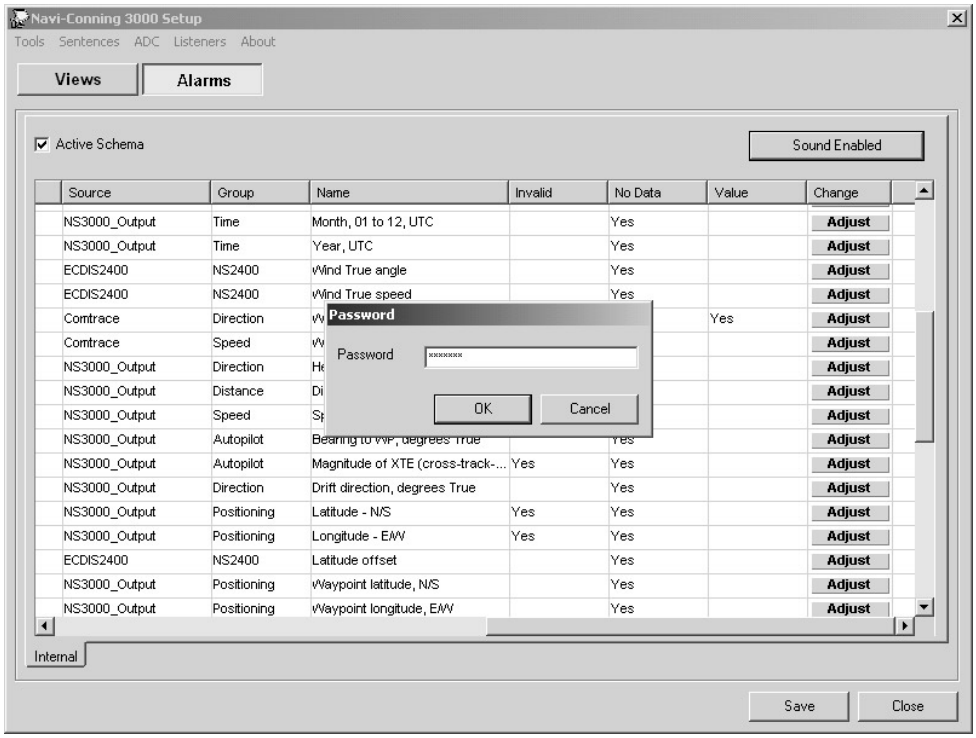
As the same alarm name is entered for different parameters, an alarm combining a group of parameters is created. It will be triggered off by the generation of alarm for any of the parameters included in the group.

Press “OK” button.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Active Schema
Sound Enabled
No Source Group Name Invalid No Data Value Change
017 ECDIS2400 NS2400 Wind True angle Yes Adjust
018 ECDIS2400 NS2400 Wind True speed Yes Adjust
019 Comtrace Direction Wind angle, 0 to 359 degrees, ... Yes Yes Adjust
020 Comtrace Speed Wind speed, Theoretical Yes Yes Yes Adjust
021 NS3000_Output Direction Heading, degrees True Yes Adjust
022 NS3000_Output Distance Distance, nautical miles Yes Adjust
023 NS3000_Output Speed Speed, knots Yes Adjust
024 NS3000_Output Autopilot Bearing to WP, degrees True Yes Adjust
025 NS3000_Output Autopilot Magnitude of XTE (cross-track-... Yes Yes Adjust
026 NS3000_Output Direction Drift direction, degrees True Yes Adjust
027 NS3000_Output Positioning Latitude - N/S Yes Yes Adjust
028 NS3000_Output Positioning Longitude - E/W Yes Yes Adjust
029 ECDIS2400 NS2400 Latitude offset Yes Adjust
030 NS3000_Output Positioning Waypoint latitude, N/S Yes Adjust
031 NS3000_Output Positioning Waypoint longitude, E/W Yes Adjust
032 ECDIS2400 NS2400 GGA HDOP Yes Adjust
033 ECDIS2400 NS2400 GGA satellite number Yes Adjust
Internal
Save
Close

Use “Adjust” buttons in the appropriate lines of the diagram to change the alarm generation settings for other parameters.

By default, alarm generation is associated with an acoustic signal. To turn the sound signal off, press “Sound Enable” button.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Active Schema
Sound Enabled
Source Group Name Invalid No Data Value Change
NS3000_Output Time Month, 01 to 12, UTC Yes Adjust
NS3000_Output Time Year, UTC Yes Adjust
ECDIS2400 NS2400 Wind True angle Yes Adjust
ECDIS2400 NS2400 Wind True speed Yes Adjust
Comtrace Direction Yes Adjust
Comtrace Speed Adjust
NS3000_Output Direction Adjust
NS3000_Output Distance Adjust
NS3000_Output Speed Adjust
NS3000_Output Autopilot Adjust
NS3000_Output Autopilot Magnitude of XTE (cross-track-... Yes Yes Adjust
NS3000_Output Direction Drift direction, degrees True Yes Adjust
NS3000_Output Positioning Latitude - N/S Yes Yes Adjust
NS3000_Output Positioning Longitude - E/W Yes Yes Adjust
ECDIS2400 NS2400 Latitude offset Yes Adjust
NS3000_Output Positioning Waypoint latitude, N/S Yes Adjust
NS3000_Output Positioning Waypoint longitude, E/W Yes Adjust
Password
Password
OK
Cancel
Internal
Save
Close

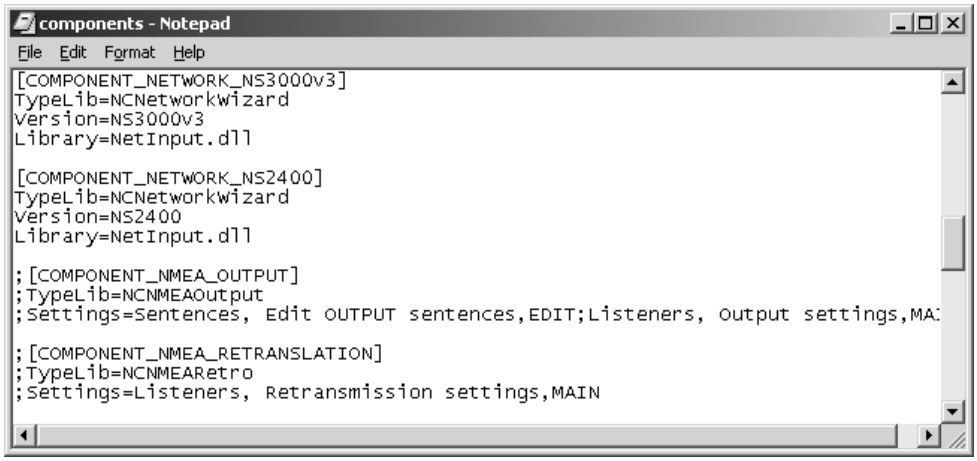
Enter “transas” for password and press “OK” button. The sound signal will be turned off.

Press “Save” button in “Navi-Conning 3000 Setup” utility’s Main window to save the changes you have made.

Connection and Adjustment of Output Functionality

Connection of Output Functionality

Edit `components.cfg` (*C:\Transas\NC3000*) file which is intended for Navi-Conning 3000 program configuring. To connect **Output** functionality, find `[COMPONENT_NMEA_OUTPUT]`.

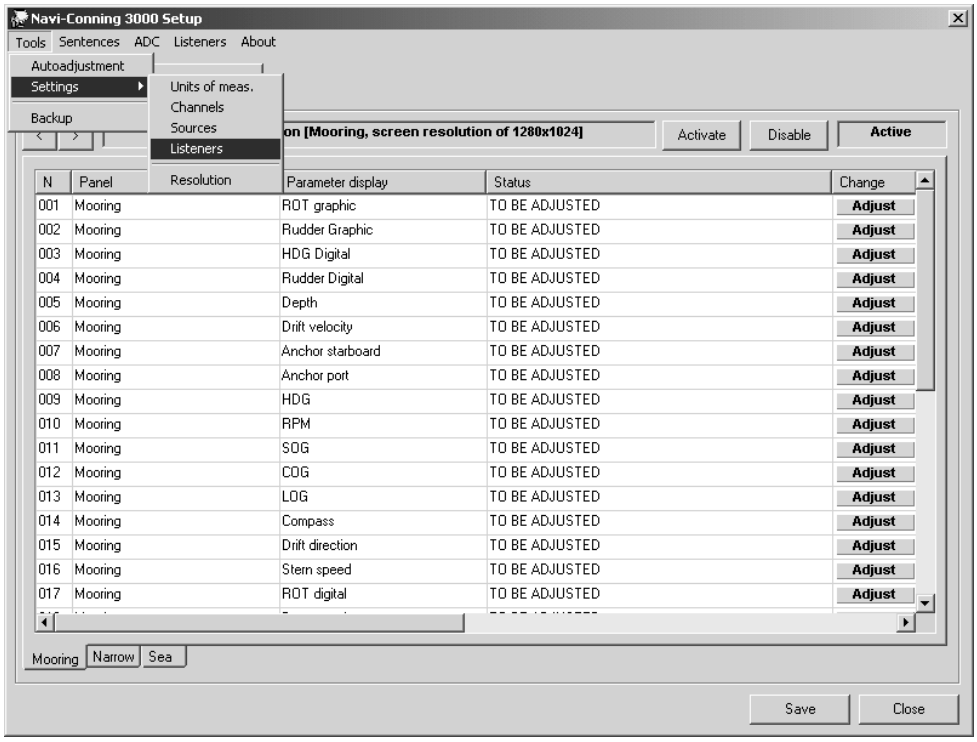


By default, **Output** functionality is off. To connect it, delete ";" signs before all the lines of `[COMPONENT_NMEA_OUTPUT]` unit.

In much the same way, connect the sentence retransmission functionality in `[COMPONENT_NMEA_RETRANSLATION]` unit.

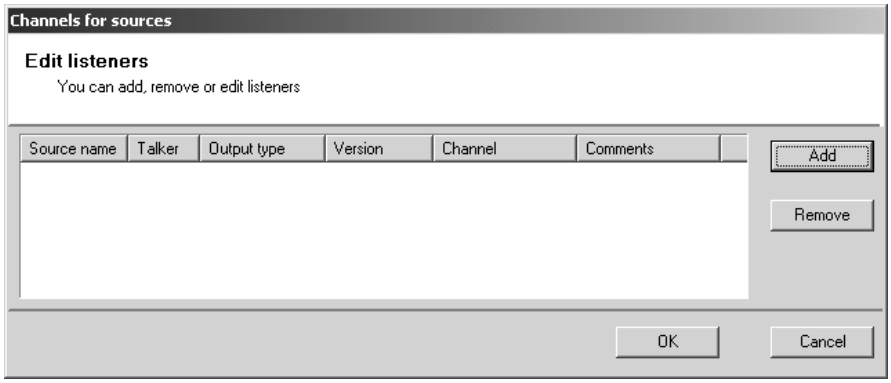
Setting of Parameter Receivers

Open TOOLS menu of Main menu.

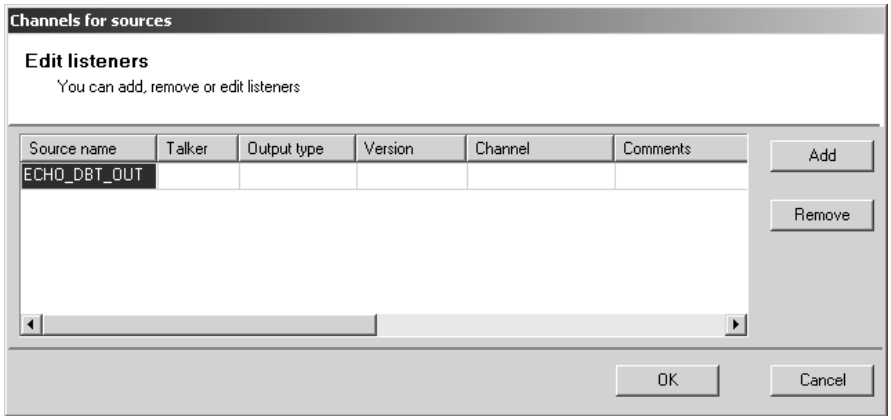

Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Autoadjustment
Settings
Backup
Units of meas.
Channels
Sources
Listeners
Resolution
on [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring Narrow Sea
Save
Close

In TOOLS menu which will open up, select SOURCES option from SETTINGS submenu.

In TOOLS menu which will open up, select LISTENERS option from SETTINGS submenu.



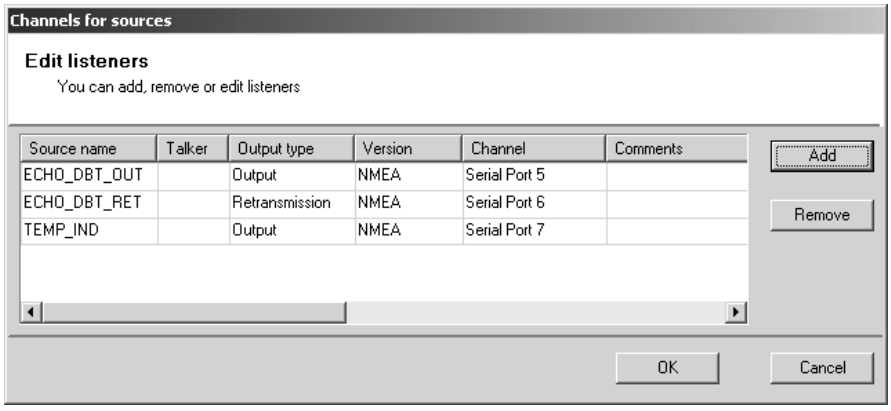
In “Edit listeners” window which will open up, press “Add” button. Position the cursor on a cell in “Source name” column and double click the left trackball/mouse button. Enter the name of the parameter receiver and press <Enter>.



Use a similar procedure to enter the following parameter receiver characteristics:

- Identifier of parameter receiver in capital letters (always two characters) in “Talker” column;
- Type of operation with the given receiver of information in “Interface Name” column:
  - **Output** – transmission of parameters;
  - **Retransmission** – relaying of NMEA sentences.
- Selected interface version in “Version” column (always **NMEA**);
- Connection channel of the parameter source in “Channel” column (selected from the list of channels). The set channels should not be coincident with channels set for the parameter sources (**Sources**).

Use “Add” button to set the required number of parameter receivers.

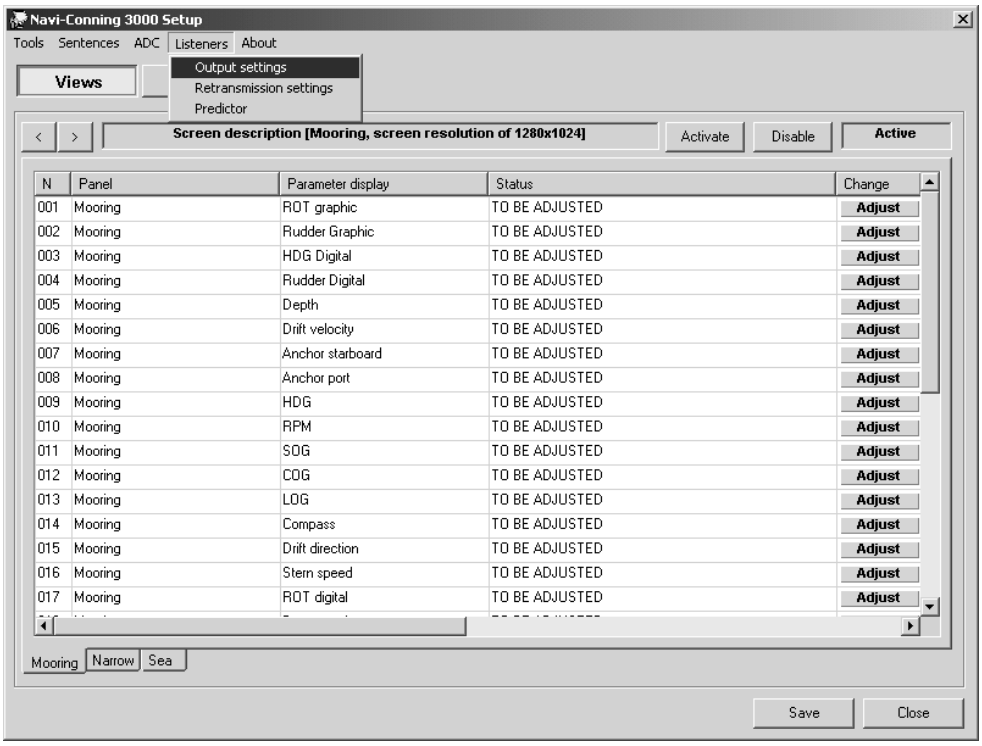


Press “Ok” button to save the settings you have made and exit to Main window of “Navi-Conning Setup” utility.

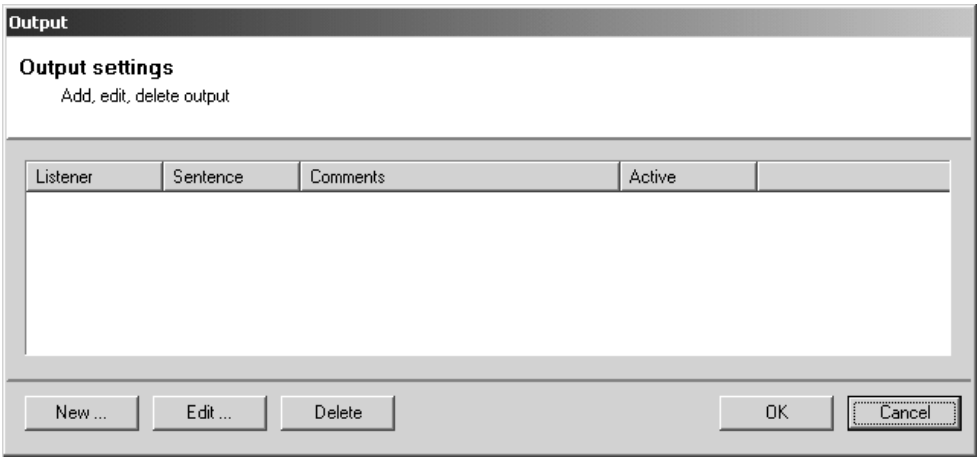
Press “Save” button in Main window of “Navi-Conning Setup” utility to save the changes you have made.

Setting of Parameters Output

Open LISTENERS menu of the Main menu.


Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
Output settings
Retransmission settings
Predictor
Views
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In LISTENERS menu which will open up, select OUTPUT SETTING option.

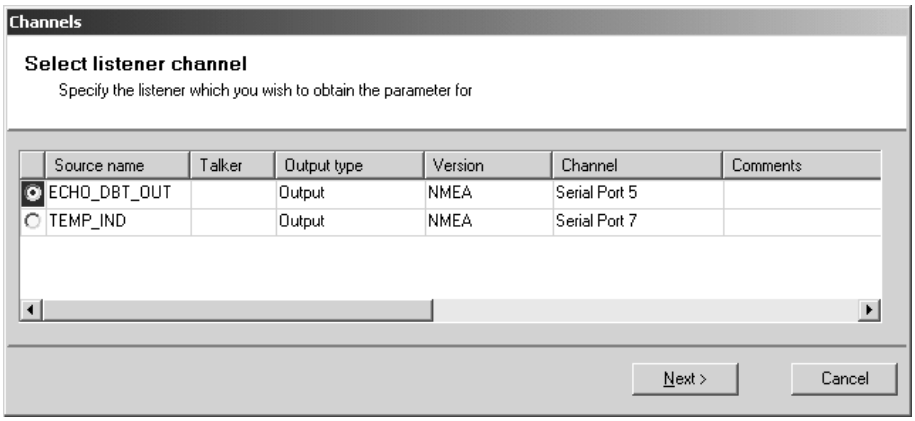


Press “New” button.

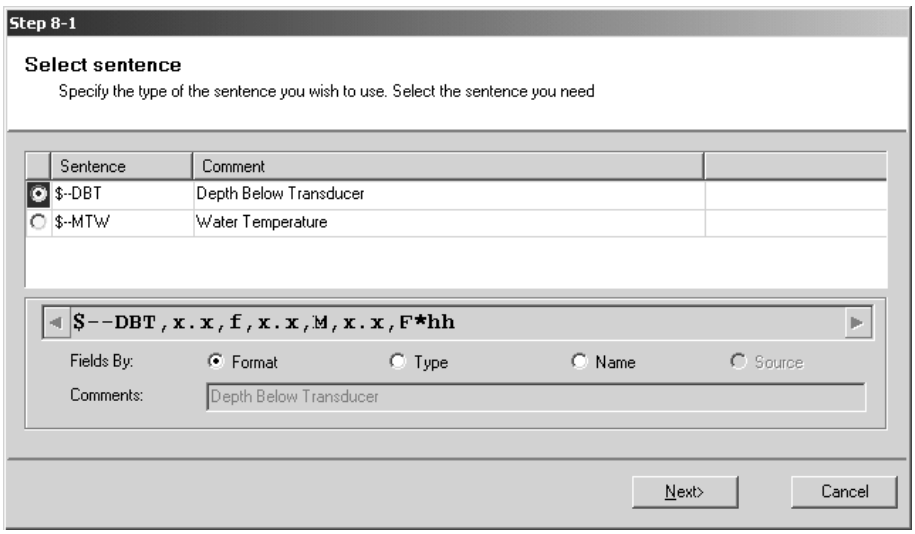
Select the external device which the parameters should be output to.

ATTENTION!

In the absence of the required external device in the table, press “Cancel” button to exit from the setup wizard and add the required device by using *Tools\Settings\Listeners* option of the utility’s Main menu (see paragraph **Setting of Parameter Receivers** of this chapter).



Press “Next>” button.

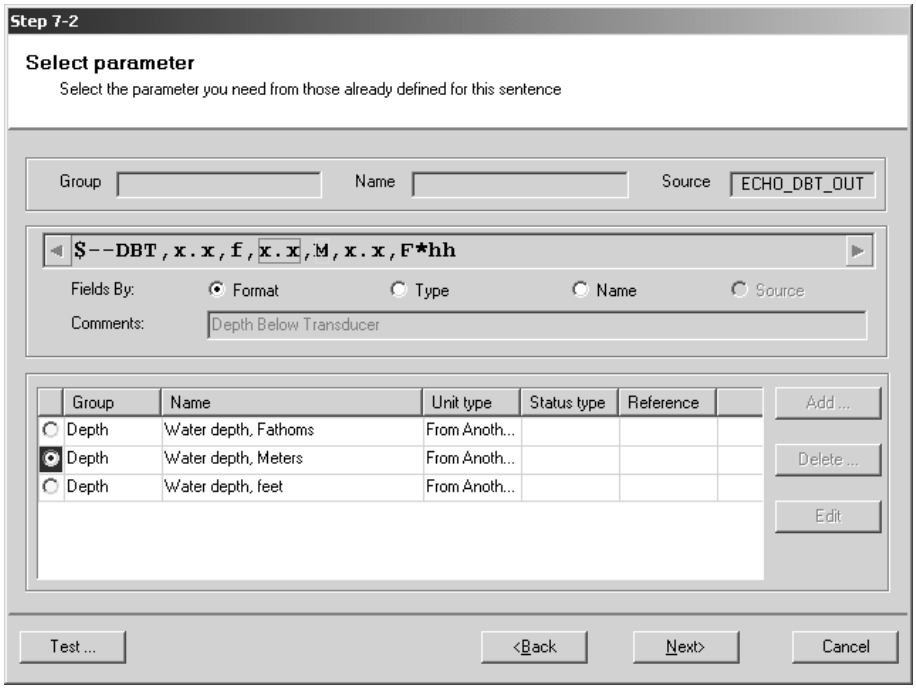


In the database, select a sentence which will be sent to the Output.

ATTENTION!

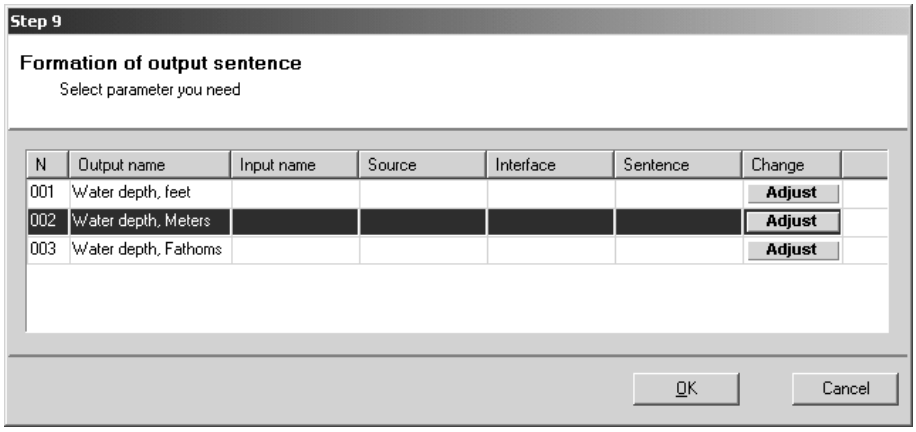
In the absence of the required sentence in the table, press “Cancel” button to exit from the setup wizard and create the sentence by using Sentence Editor *Sentences\Edit Output Sentences* option of the utility’s Main menu (see **Annex A** paragraph **Sentence Database Editing**).

Press “Next>” button.



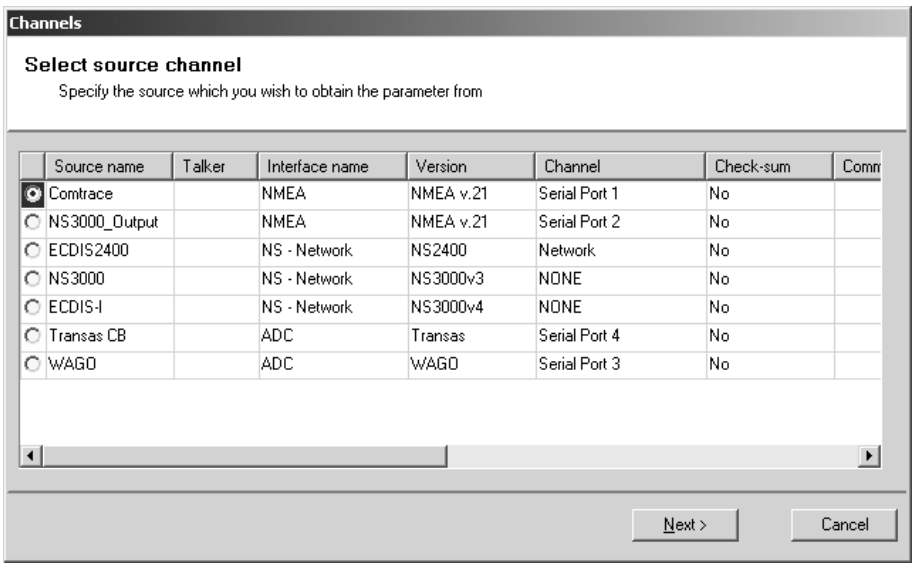
Press “Next>” button.

“Formation of output sentence” window displays a list of parameters contained in the sentence output onto an external device.



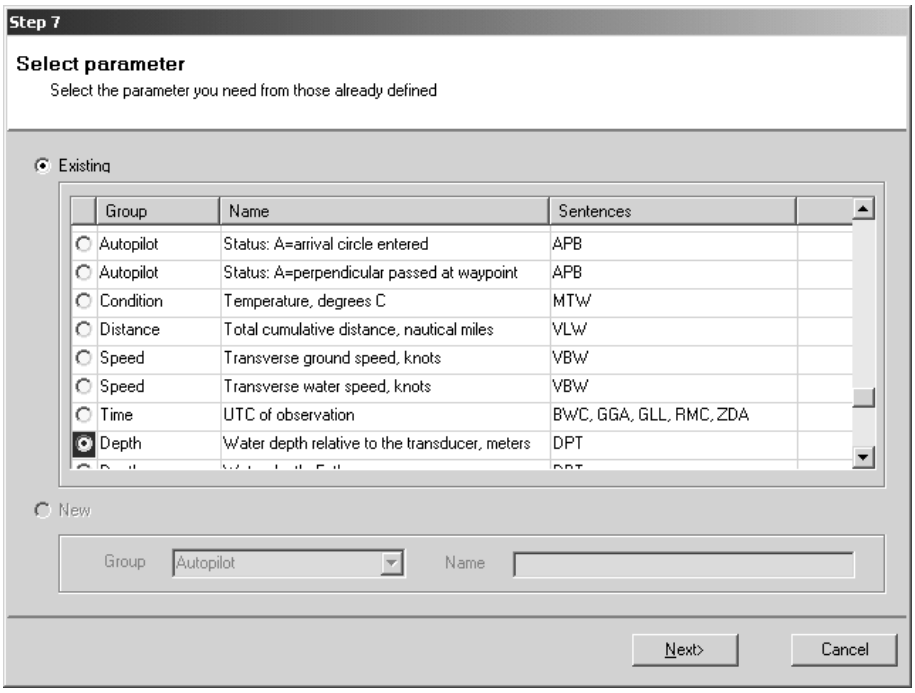
Press “Adjust” button in the line of the parameter which is being set.

Select the source of information which the required parameter is supplied by. For the source, you can select any sources with NMEA interface, network and Transas CB, the existing limitations taken into account (see **Chapter 1** paragraph **Reception/Processing and Output of Data from/to External Devices** item **Editor Capabilities and Limitations**). In the example below, NMEA interface will serve as the source.



Press “Next>” button.

Select the required parameter.

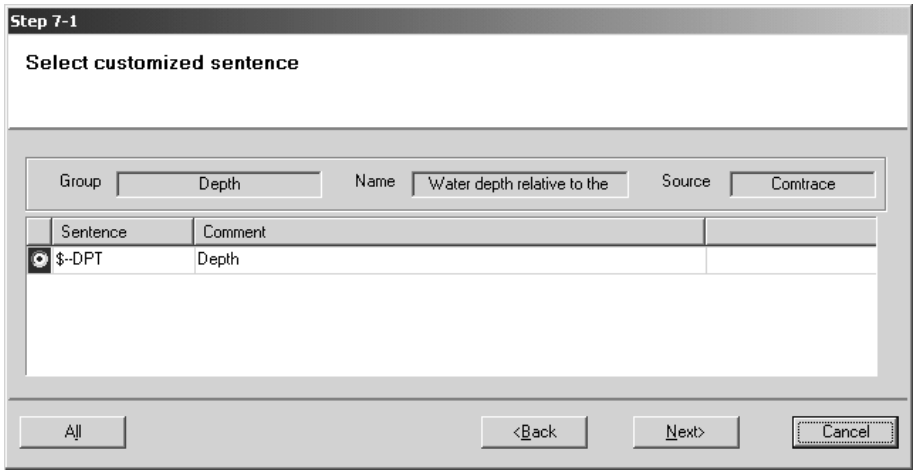


Press “Next>” button.

Select a sentence supplied by the specified source and containing the necessary parameter.

ATTENTION!

Sentences listed in the table are sorted by the group which the necessary parameter belongs to.

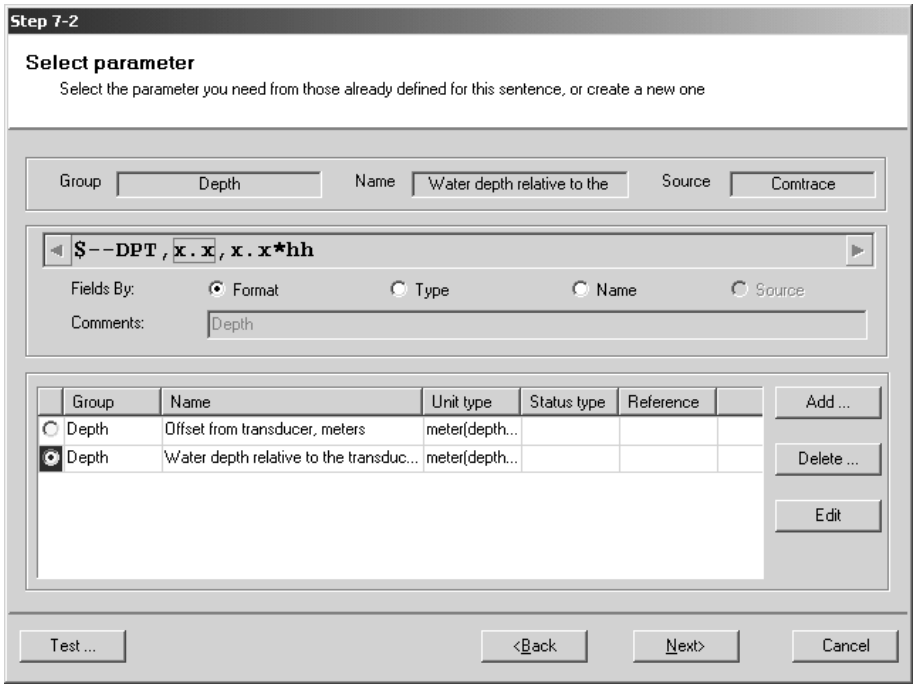


Press “Next>” button.

Specify the required parameter in the selected sentence.

ATTENTION !

The order of parameters in the table does not always correspond to the order of parameters in a sentence.



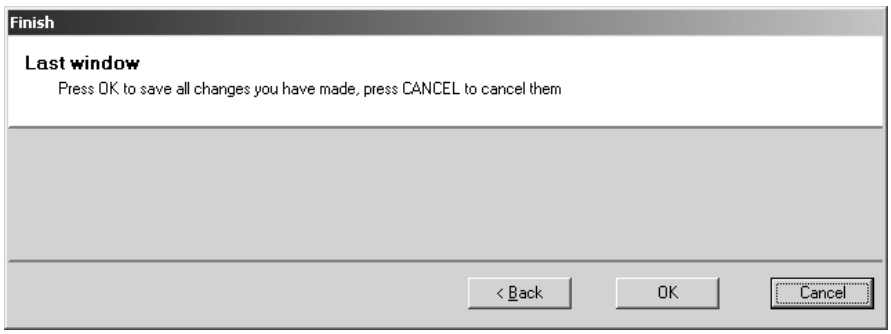
Each parameter contained in a sentence and necessary for the user, has the following characteristics:

- Value – parameter value;
- Unit – parameter measurement units (may be absent);
- Status – parameter status (may be absent);
- Reference – parameter reference (may be absent).

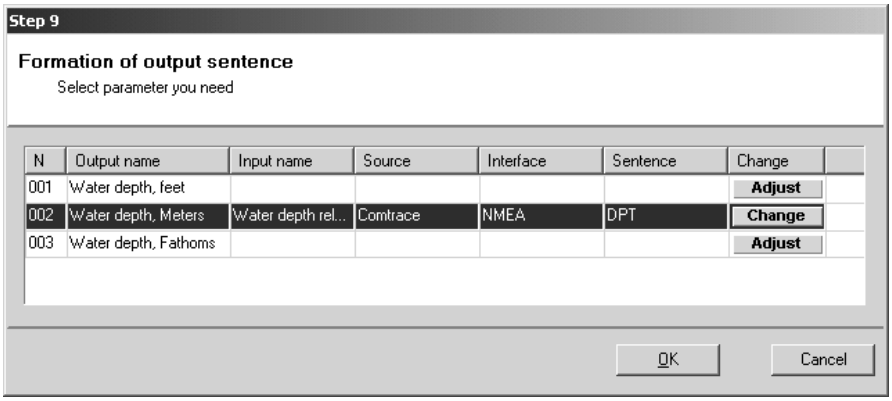
The output parameter will have the following characteristics:

- Value. The value of the output parameter will correspond to the input parameter value;
- Units:
  - If the input and output parameters contain variable measurement units, they will match each other;
  - If the output parameter contains variable measurement units, whereas the input parameter contains constant units, units field of the output parameter will be empty;
  - If the output parameter contains constant measurement units, whereas the input parameter contains variable units, measurement units of the input parameter are ignored.
- Status:
  - If the input and output parameters contain status, these will match each other;
  - If the output parameter contains a status, whereas the input parameter does not, the output parameter status field will be empty;
  - If the output parameter contains no status, the input parameter status is ignored.

Press “Next>” button.



Press “OK” button.



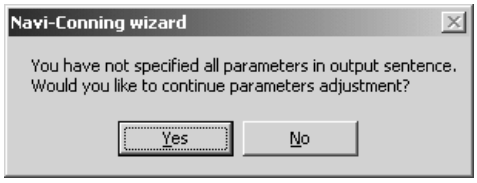
“Source” column of “Formation of output sentence” window will specify the source of information for the parameter.

Use “Adjust” buttons in relevant lines of the list to set the information sources for the necessary parameters which are output onto an external device.

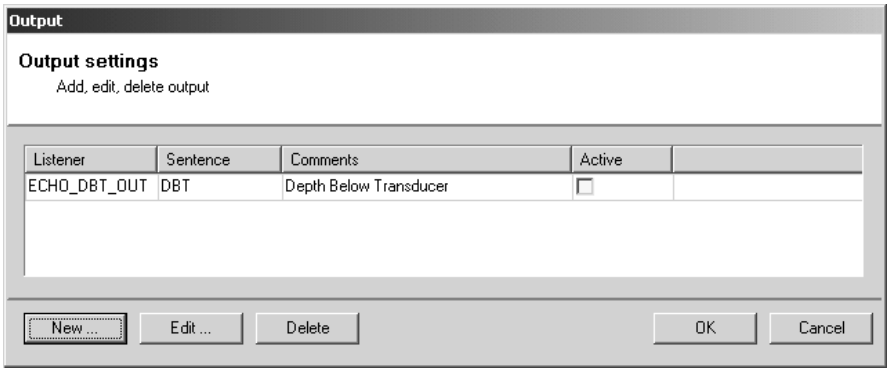
Press “Next>” button.

ATTENTION!

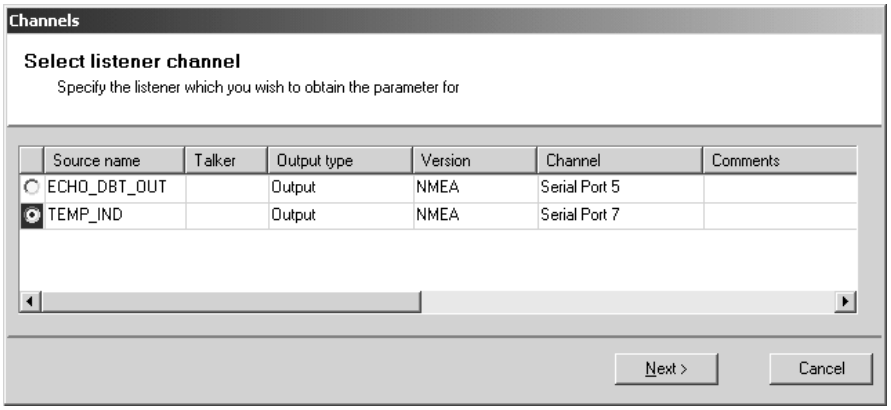
If only part of parameters are set in a sentence output onto an external device, the following warning will be displayed.


Navi-Conning wizard
You have not specified all parameters in output sentence.
Would you like to continue parameters adjustment?
Yes
No

Press “Yes” button to continue the adjustment of output parameters or “No” button to exit from “Formation of the output sentence” window.



Consider a sample of converting a parameter received from the network to the NMEA sentence parameter sent to the Output. Press “New” button of “Output settings” window.

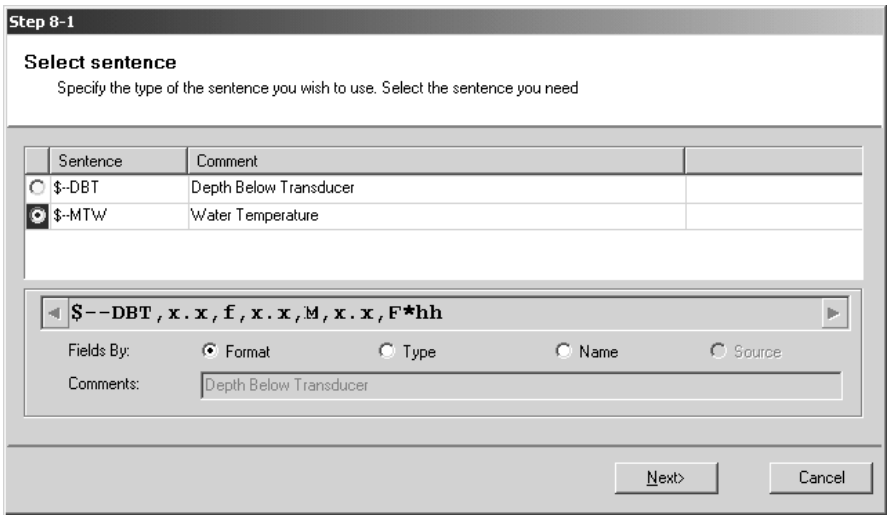


Select the external device which the parameters should be output to.

ATTENTION!

In the absence of the required external device in the table, press “Cancel” button to exit from the setup wizard and add the required device by using *Tools\Settings\Listeners* option of the utility’s Main menu (see paragraph **Setting of Parameter Receivers** of this chapter).

Press “Next>” button.

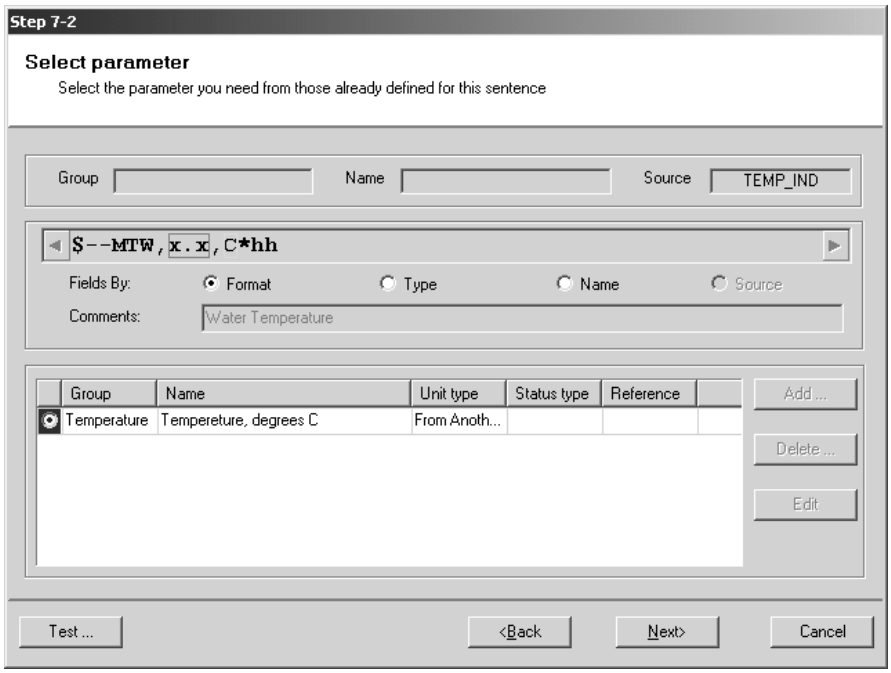


In the database, select the sentence which will be sent to the Output.

ATTENTION!

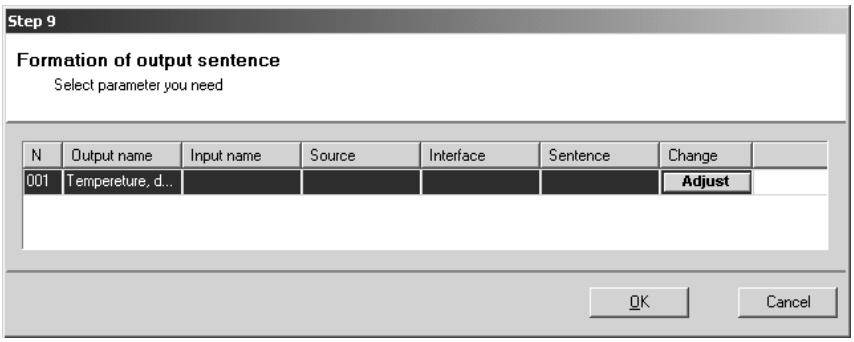
In the absence of the required sentence in the table, press “Cancel” button to exit from the setup wizard and create the sentence by using Sentence Editor *Sentences\Edit Output Sentences* option of the utility’s Main menu (see **Annex A** paragraph **Sentence Database Editing**).

Press “Next>” button.



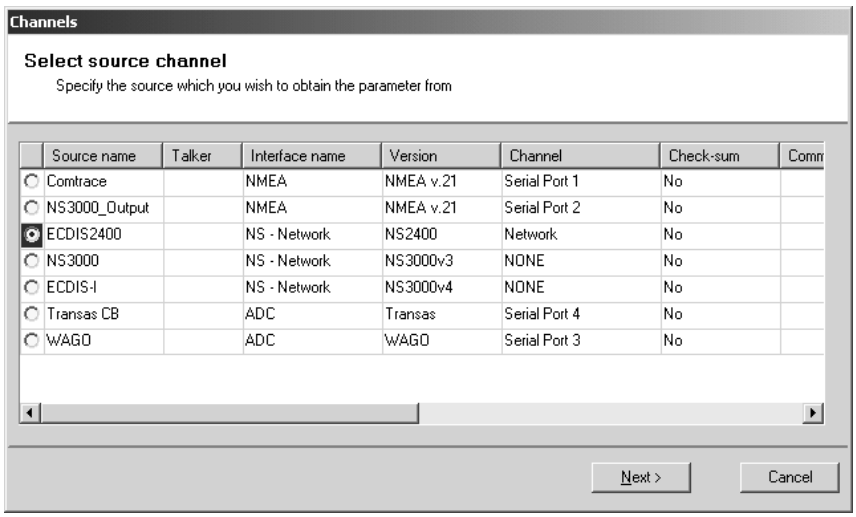
Press “Next>” button.

“Formation of output sentence” window displays a list of parameters contained in the sentence output onto an external device.



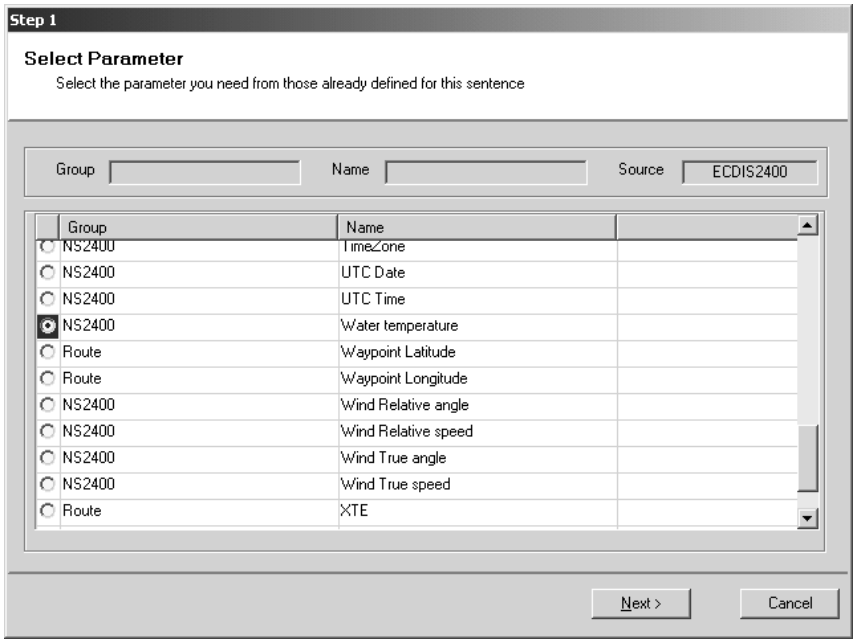
Press “Adjust” button in the line of the parameter which is being set.

Select the source of information which the required parameter is supplied by. In the example below, the network interface will serve for a source.

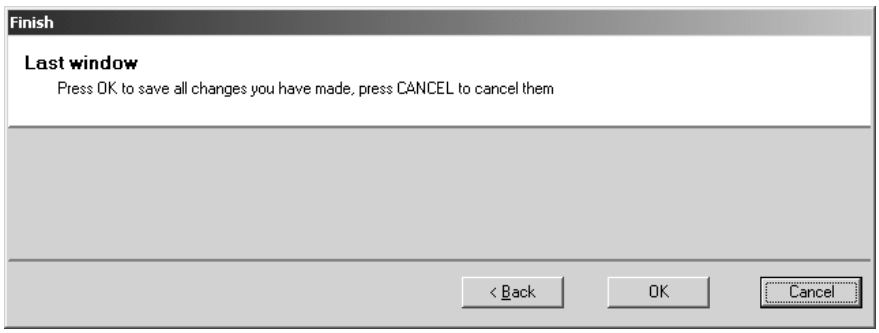


Press “Next>” button.

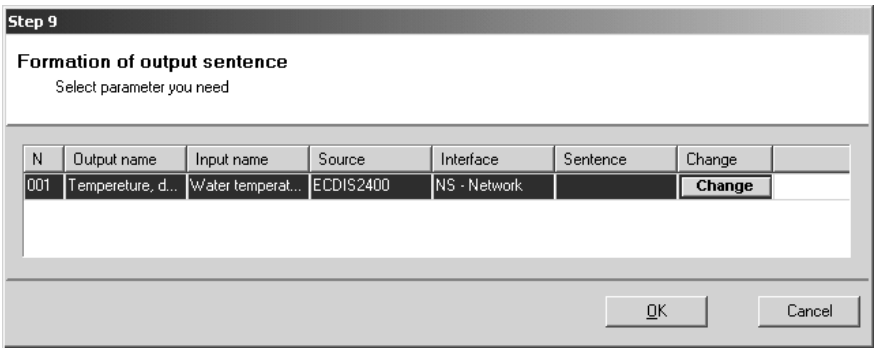
Select the required parameter received via the network.



Press “Next>” button.

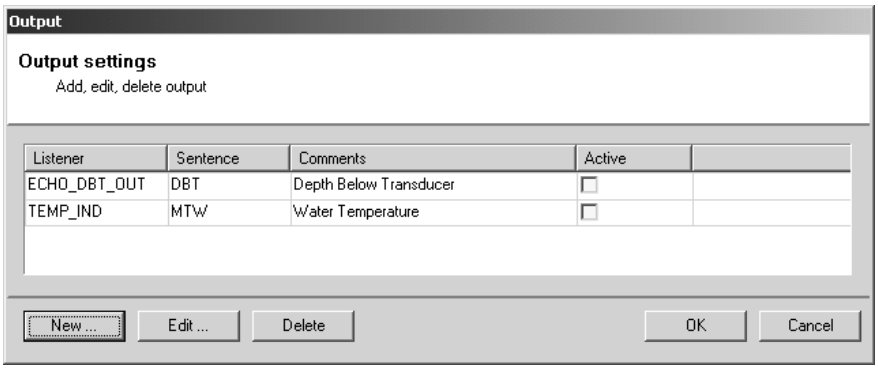


Press “OK” button.

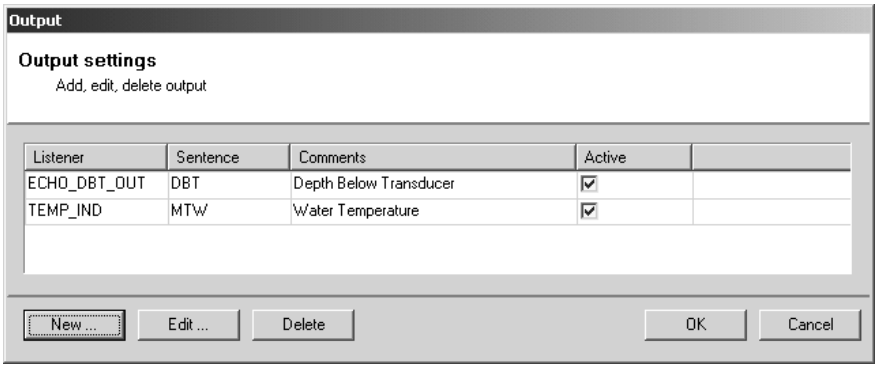


“Source” column of “Formation of output sentence” window will specify the source of information for the parameter.

Press “OK” button.



Check the checkboxes of sentences to be included in the output onto an external device at the start of “Navi-Conning” application.

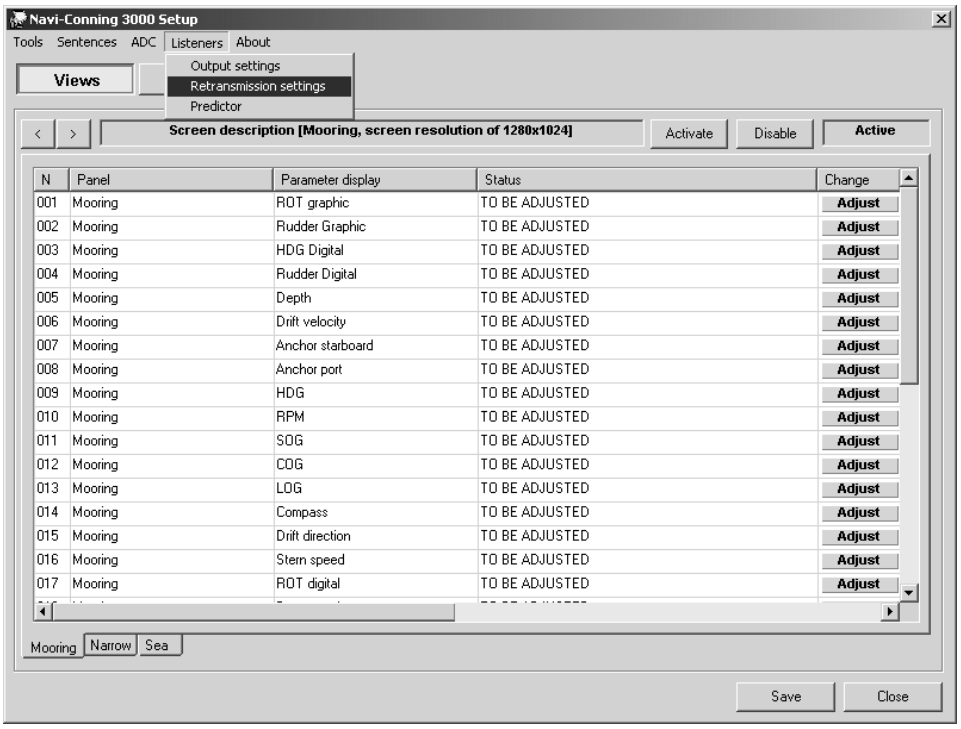


Press “Ok” button to save the settings you have made and exit to the Main window of “Navi-Conning Setup” utility.

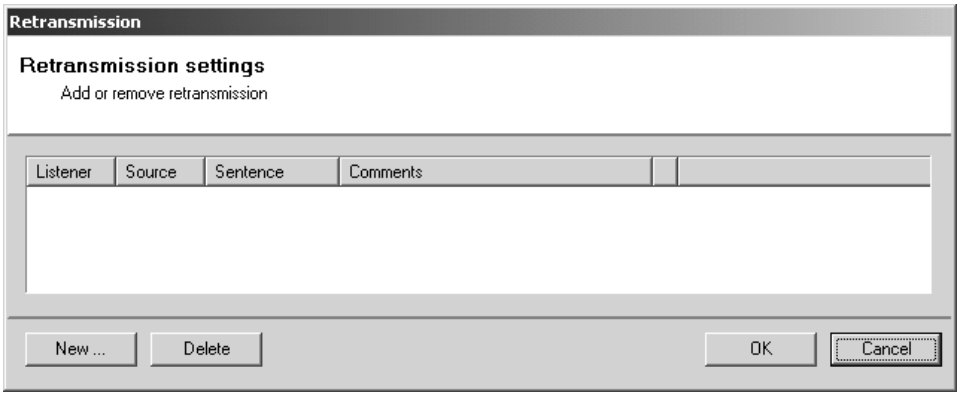
Press “Save” button in the Main window of “Navi-Conning Setup” utility to save the changes you have made.

Adjustment of ComPort Retransmission

Open LISTENERS menu of the Main menu.


Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
Output settings
Retransmission settings
Predictor
Views
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In LISTENERS menu which will open up, select RETRANSMISSION SETTING option.

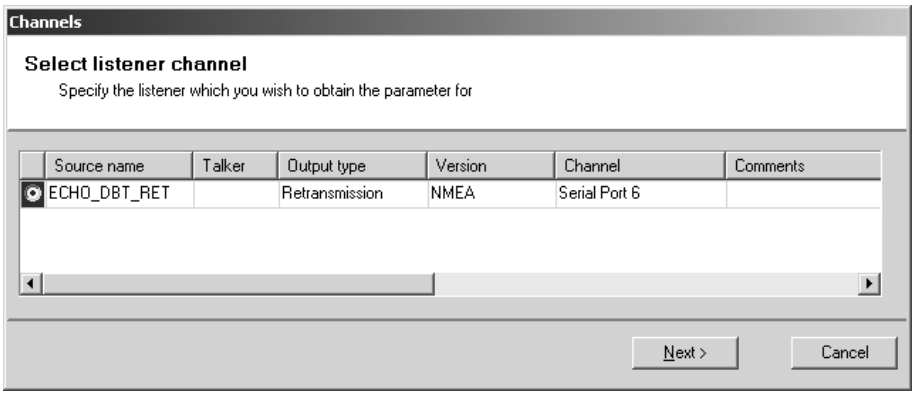


Press “New” button.

Select an external device which the parameters should be output to.

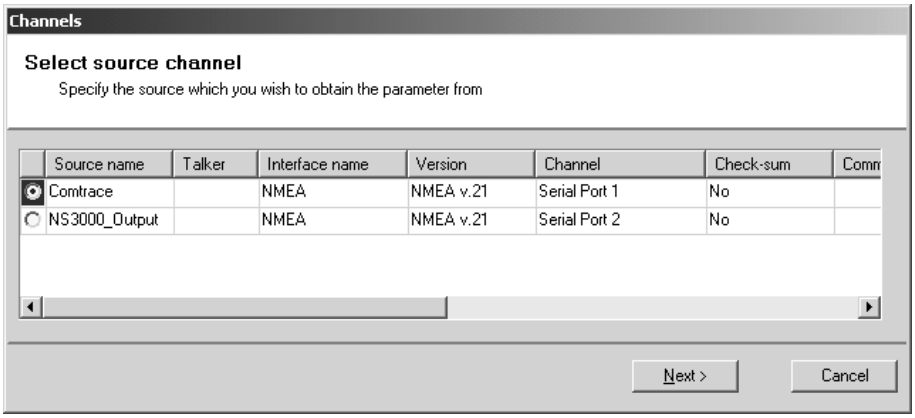
ATTENTION!

In the absence of the required external device in the table, press “Cancel” button to exit from the setup wizard and add the required source by using *Tools\Settings\Listeners* option of the utility’s Main menu (see paragraph **Setting of Parameter Receivers** of this chapter).



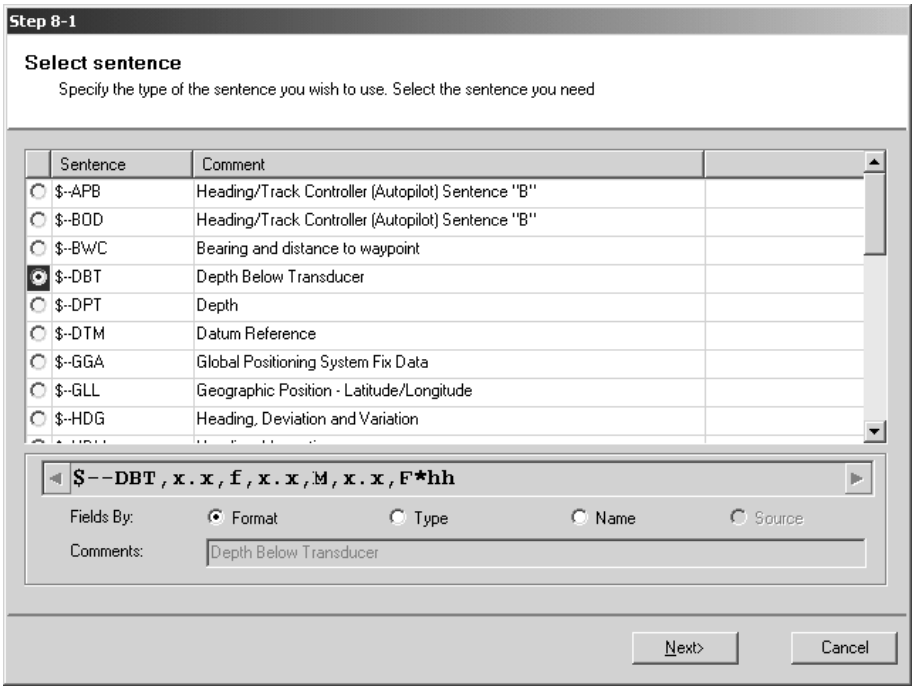
Press “Next>” button.

Select the source of information which the necessary sentence is supplied by.

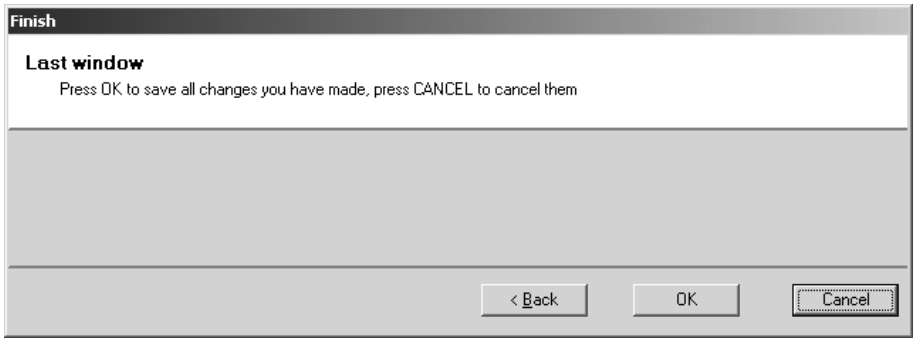


Press “Next>” button.

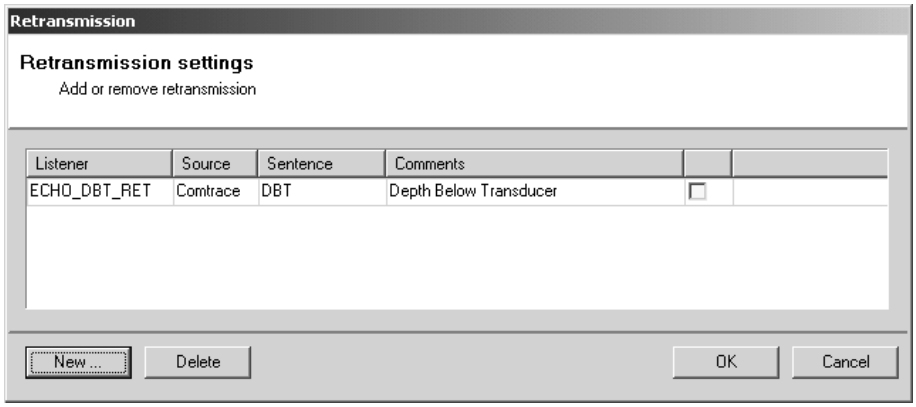
Select a sentence supplied by the specified source.



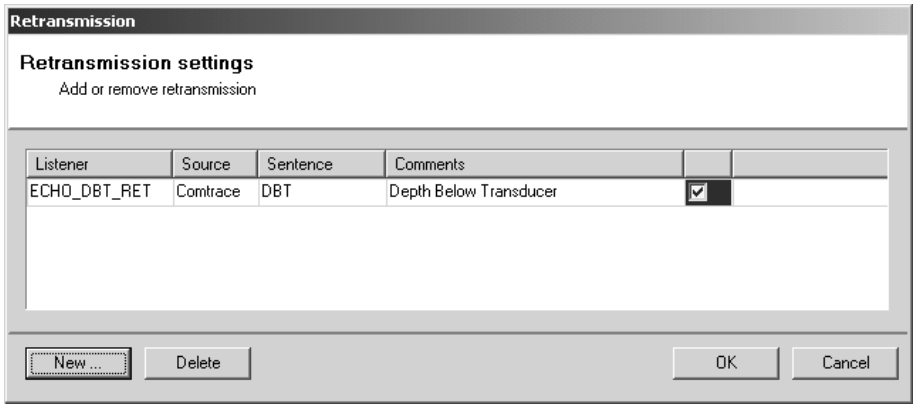
Press “Next>” button.



Press “Ok” button.



Check the checkbox of a sentence to be included in the output onto an external device at the start of “Navi-Conning” utility.



Press “Ok” button to save the settings you have made and exit to the Main window of “Navi-Conning Setup” utility.

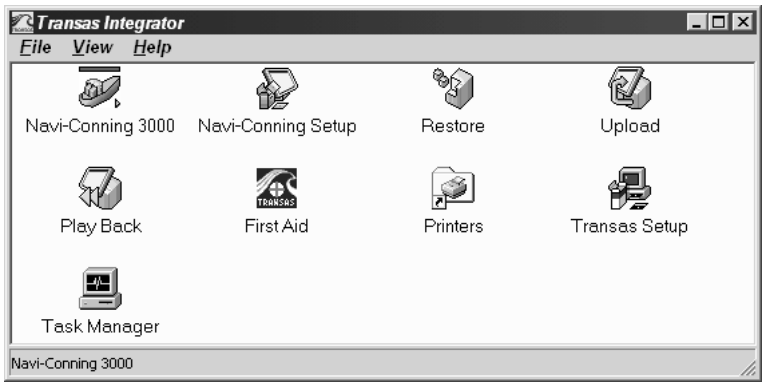
Press “Save” button in the Main window of “Navi-Conning Setup” utility to save the changes you have made.

TRANSAS INTEGRATOR

General

The Transas Integrator software facility is intended for:

- Limiting access to OS Windows NT Workstation 4.0 or Windows 2000 resources;
- Manual or automatic start of utilities included in the Navi-Conning 3000 product.



In addition, a possibility of access to several Windows NT/Windows 2000 utilities has been provided:

- “Printer” designed for the printer installation and setup;
- “Task Manager” serving for running Windows NT/Windows 2000 applications. For the access to the Task Manager it is necessary to enter a password (open for service engineers only).

Procedures to handle these utilities are detailed in Microsoft Windows NT Workstation 4.0/ Windows 2000 documentation.

Installation

NN	Required procedure	Comment
1	Open INTEG, subdirectory. Run `setup.exe`. (<*CD drive*>:*INTEG**SETUP.EXE*)	
2	Press “Install Transas Integrator” Button And Specify The Path To The Installed Navi-Conning Product	
3	Restart the computer and run Navi-Conning application	

ATTENTION!

After the installation of Transas Integrator the operator access to all the Windows NT applications will be closed (e.g. Windows Explorer, Registry, etc.). If, however, it is necessary to load one of such applications, use Task Manager icon. The system assword should be entered: in this case this is an 8-character “transas” combination where the first character is a space. After starting “Task Manager” application, use “Run” command to run any other application.

Deinstallation

№	Required procedure	Comments
1	Turn off all the component applications of the Navi-Conning software product	
2	Press simultaneously <Ctrl>+<Alt>+<Shift>+<F8> keys. A window will be displayed for the input of a password for the Transas Integrator deinstallation. Enter “avlad” password. Press “Uninstall Transas Integrator” button	If a correct password is entered, the window will disappear without additional notification
3	Exit from Transas Integrator (*File\Exit*). Confirm the exit and re-start the computer	
4	Run “Add/Remove Programs” application (*Start\Settings\Control Panel\ Add Remove Programs*). Find and delete “Transas Integrator” application	

SAVING OF THE GENERATED CONFIGURATION (BACKUP COPY)

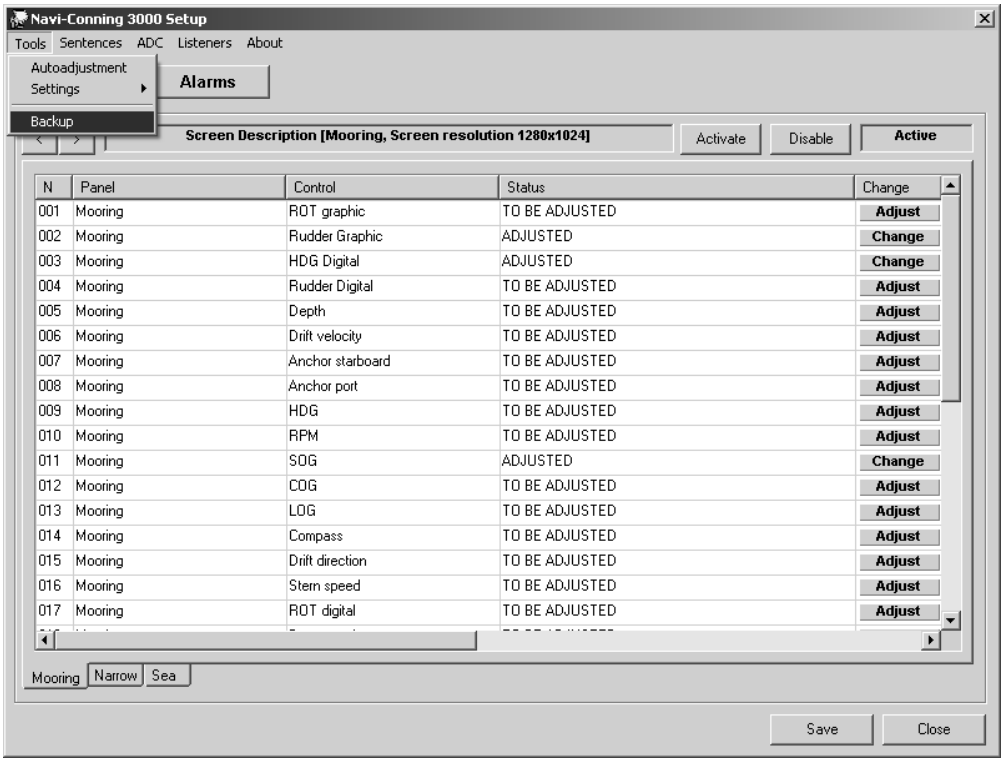
ATTENTION!

During the NC installation, a backup copy is created automatically; it is stored in `Backup` folder (*C:\Transas\Navi-Conning\Backup*).

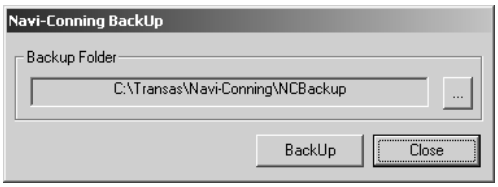
To create a backup copy of the NC 3000 configuration, after making the settings in “Navi-Conning Setup” utility, perform the following procedure.

Open TOOLS menu of the Main menu.

In TOOLS menu which will open up, select BACKUP option.

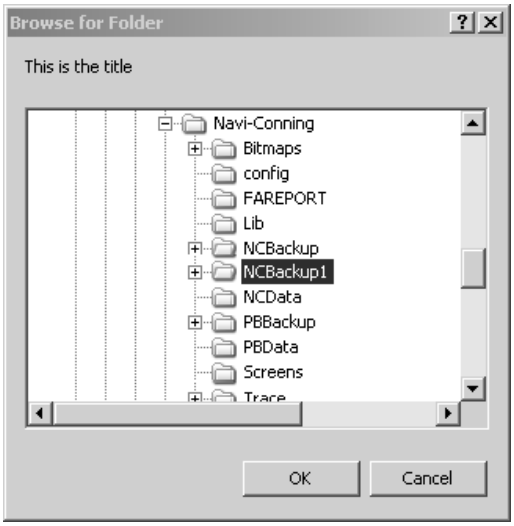


In the utility window which will open up.

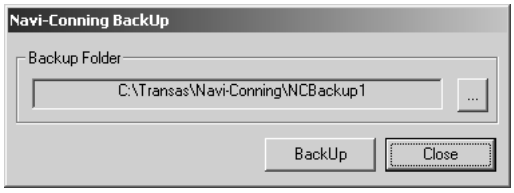


Specify the path to the folder which will store the backup copy with the generated configuration.

Note: It is advisable to create a backup copy separately, beyond *C:\Transas\Navi-Conning\NCBackup* folder.



Press “OK” button.



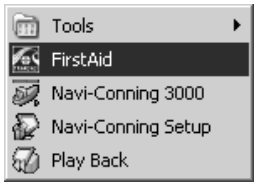
Press “BackUp” button. Backup information will be saved in the specified folder.

Press “OK” button.

To exit from “Navi-Conning Backup” utility, press “Close” button.

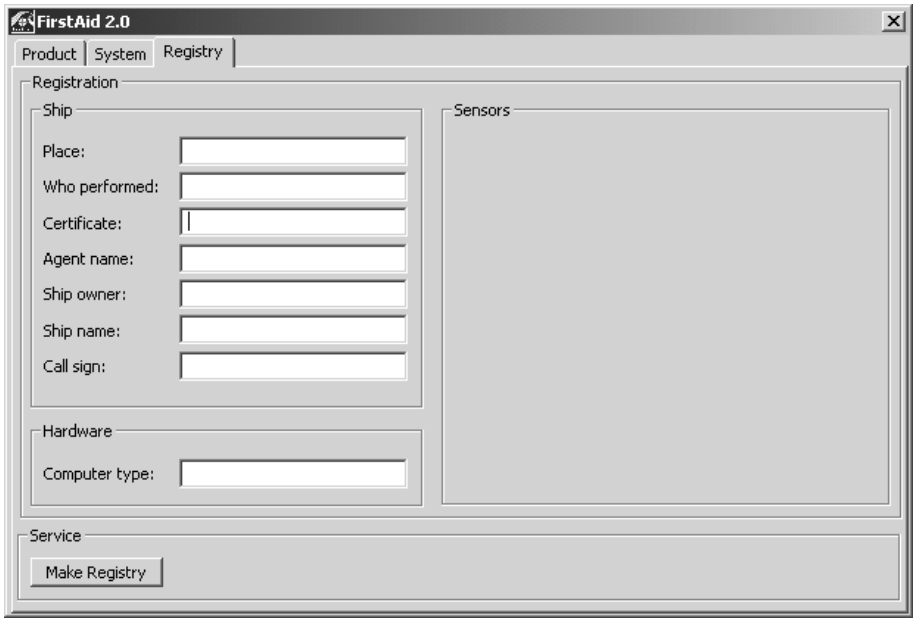
PERFORMANCE OF REGISTRATION PROCEDURE

Turn on the “First Aid” utility by selecting the appropriate name in the Main menu.



After the program loading, the “First Aid” screen will be displayed.

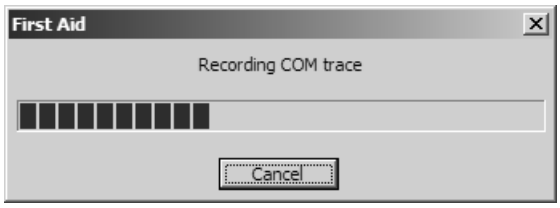
Use the tab in the top part of the utility’s Main window to open “Registry” page.

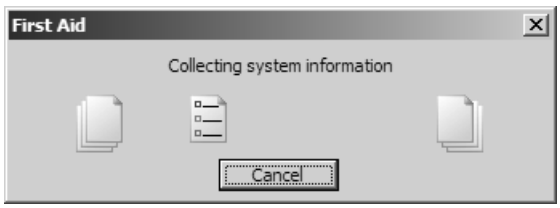


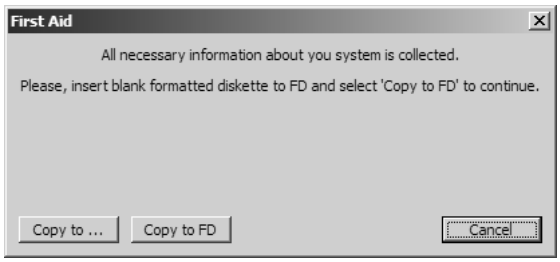
Fill in the fields in accordance with comments provided in the table below:

Table field	Comments
PLACE	Port where the installation was made
WHO PERFORMED	Name of the engineer who made the installation
CERTIFICATE	Company service engineer certificate number. The field should be left empty if the engineer has not passed special training at TRANSAS
AGENT NAME	Name of the company performing maintenance
SHIP OWNER	Ship owner name
SHIP NAME	Ship name
CALL SIGN	Ship callsign
COMPUTER TYPE	Computer manufacturer and type

Press “Make Registry” button.



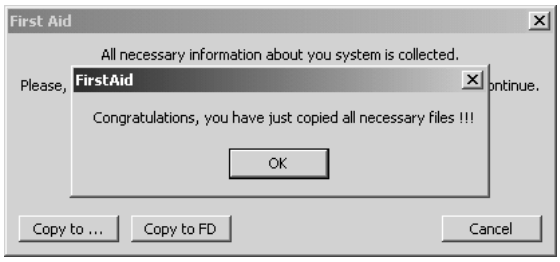



First Aid
All necessary information about you system is collected.
Please, insert blank formatted diskette to FD and select 'Copy to FD' to continue.
Copy to ...
Copy to FD
Cancel

Insert 3.5" diskette into the disk drive.

Press “Copy to FD” button.

The program has saved the registration information onto the diskette.



Press “OK” button.

Registration information should by any way sent to the Service Engineers Support System – SESAM, or to the following address: support@transas.co.uk.

CHAPTER 3

Maintenance

This chapter describes procedures for typical cases of service work.

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This chapter contains:

Order Procedure 129
General 129
Order of a New Screen View 129
Order for a New Interface 129
Installation of New Options 130
Delivery Set 130
Service Work Procedure 130
Restoring Initial NC Configuration 133
Updating NC 3000 Program 136

ORDER PROCEDURE

General

Installation of new options implies change in the NC program as compared to the base version recorded on the MNS, whereupon it can perform new functions.

It should be noted that one update only can be installed on the base program version. As the next update is installed, the previous one will be deleted.

Order of a New Screen View

ATTENTION!

In ordering upgrades of NC configuration, it is necessary to take into account the fact that configuration updates of Navi-Conning 3000 v.4.00.01 and Navi-Conning 3000 v.2.2 versions are incompatible.

To order a new Screen View:

- Make up a graphic display of a Screen View in any editor providing an explanation for the operating principles of the indicators not included in the base Screen Views;
- Specify the type of interface in use for each indicators of the Screen View which is being ordered.

Order for a New Interface

To order a new interface, it is necessary to provide a full and detailed description of the data exchange format and specify the channel in use (Serial, Virtual ports, Network, COM interface, etc.).

ATTENTION!

As the order is fulfilled, some additional information may be required.

To order new options, you can use a form provided in **Annex D. Questionnaire** paragraph.

INSTALLATION OF NEW OPTIONS

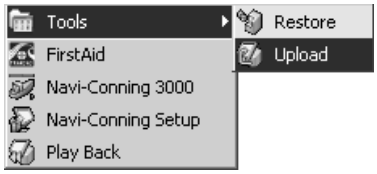
Delivery Set

Scopes of delivery sets are presented below:

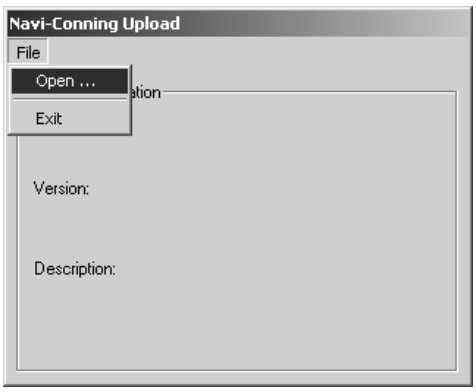
Type	Stock (delivery) set
Software options	• `*.ain` file; • `Readme.txt` file as accompanied document

Service Work Procedure

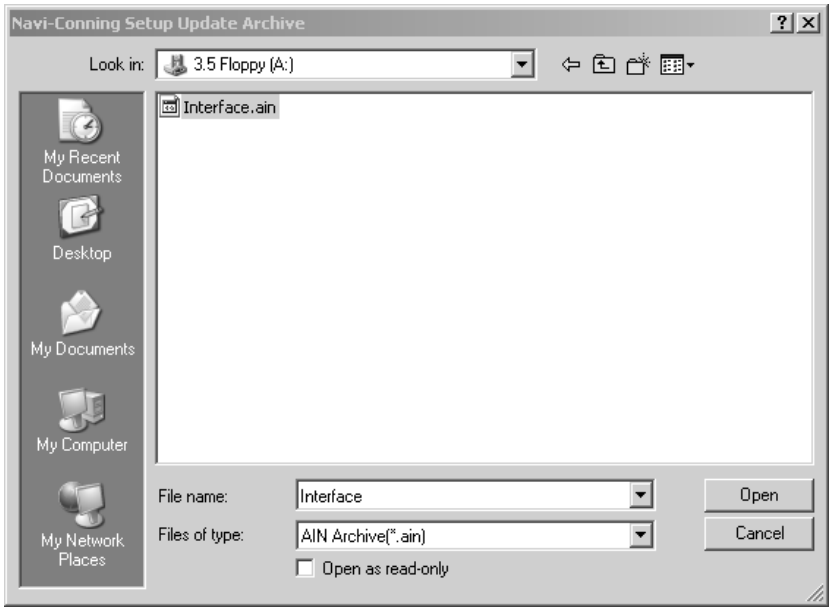
Run “Navi-Conning Upload” utility by selecting UPLOAD item in TOOLS submenu of the Main menu.



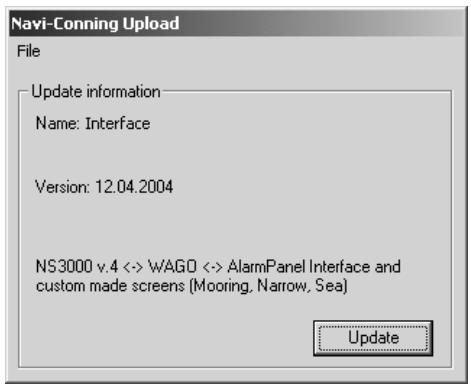
Select OPEN option in FILE menu in “Navi-Conning Upload” utility window.



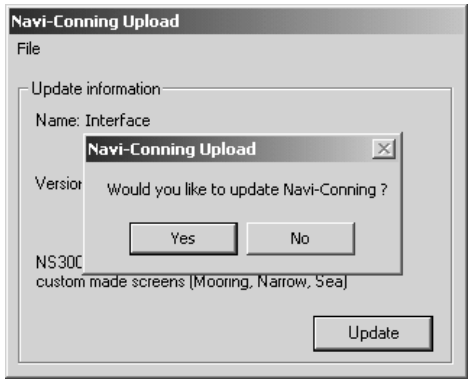
Specify the path to the file with `*.ain` extension containing new options of “Navi-Conning 3000” program.



Press “Open” button.

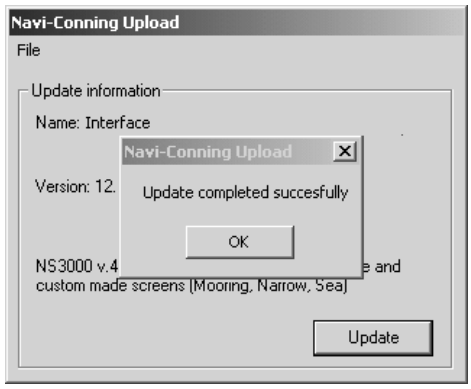


Press “Update” button.



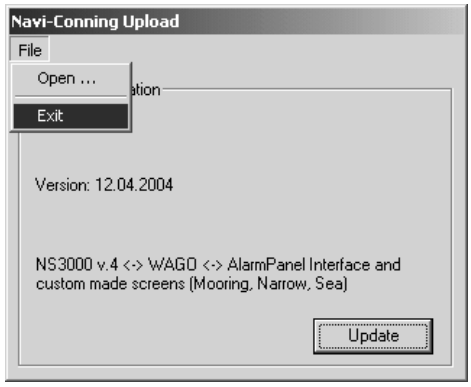
Press “Yes” button.

The program will update the configuration.

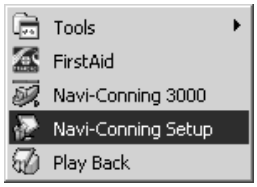


Press “OK” button.

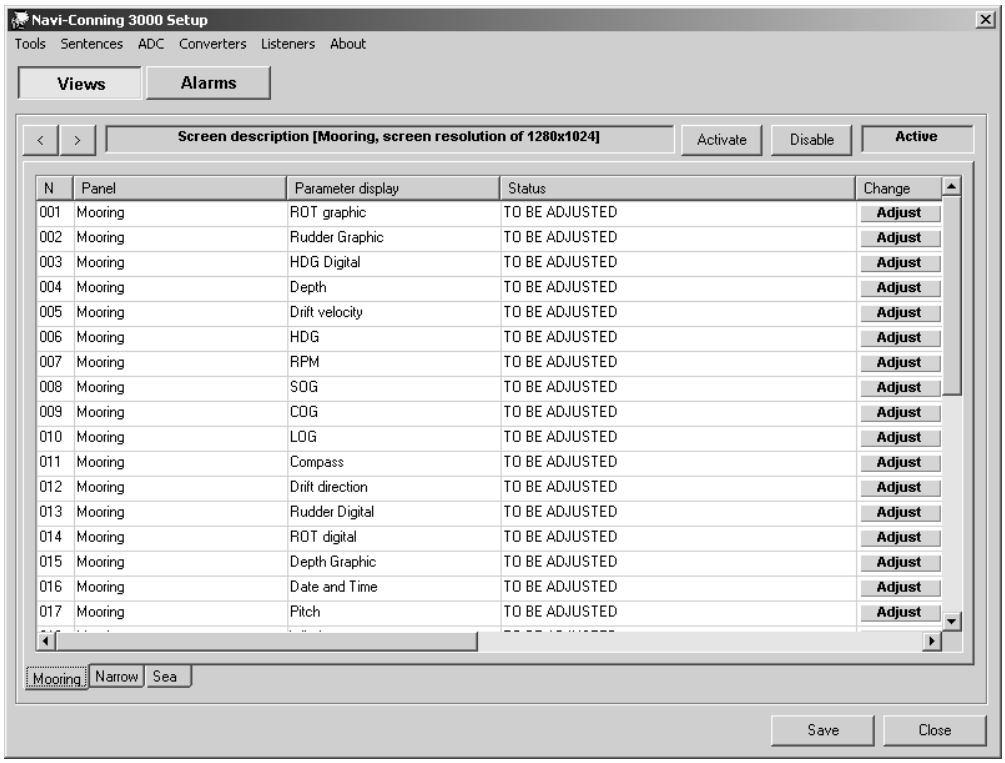
To exit from “Navi-Conning Upload” utility, select EXIT option in FILE menu.



Turn on the “Navi-Conning Setup” utility.



After the program loading, the “Navi-Conning 3000 Setup” screen will be displayed.


Navi-Conning 3000 Setup
Tools Sentences ADC Converters Listeners About
Views
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Depth TO BE ADJUSTED Adjust
005 Mooring Drift velocity TO BE ADJUSTED Adjust
006 Mooring HDG TO BE ADJUSTED Adjust
007 Mooring RPM TO BE ADJUSTED Adjust
008 Mooring SOG TO BE ADJUSTED Adjust
009 Mooring COG TO BE ADJUSTED Adjust
010 Mooring LOG TO BE ADJUSTED Adjust
011 Mooring Compass TO BE ADJUSTED Adjust
012 Mooring Drift direction TO BE ADJUSTED Adjust
013 Mooring Rudder Digital TO BE ADJUSTED Adjust
014 Mooring ROT digital TO BE ADJUSTED Adjust
015 Mooring Depth Graphic TO BE ADJUSTED Adjust
016 Mooring Date and Time TO BE ADJUSTED Adjust
017 Mooring Pitch TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

Press “Save” button to save the updated configuration.

Press “Close” button in the right bottom part of the “Navi-Conning 3000 Setup” screen, the program will be closed.

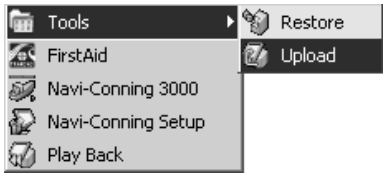
Adjust the Screen Views as required (see the paragraph **Adjustment of the Input Data Display**).

RESTORING INITIAL NC CONFIGURATION

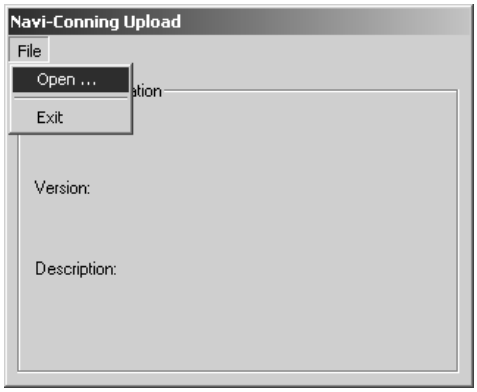
There are two ways to restore the initial NC3000 configuration:

- To install the program from the installation disk (see **Chapter 2. Installation and Registration**);
- To cancel the installed update.

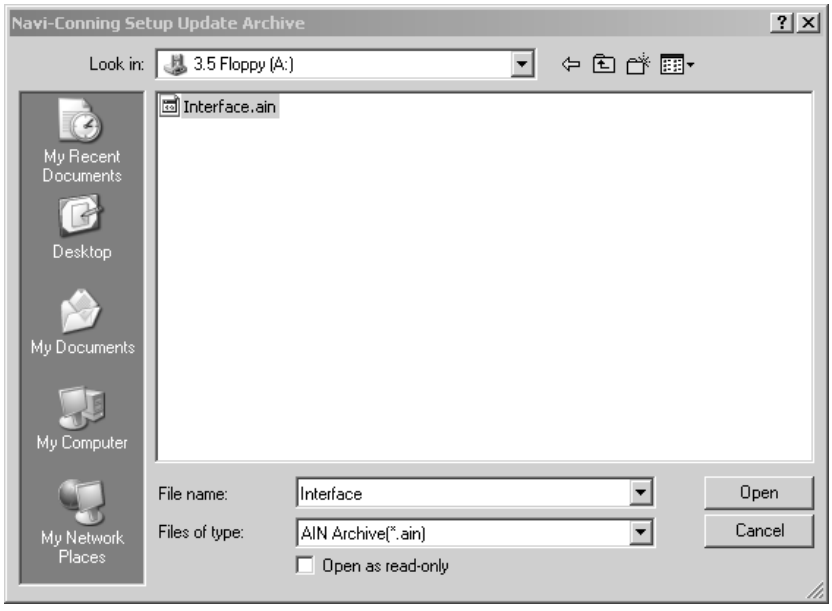
To cancel the installed update, run “Navi-Conning Upload” utility by selecting UPLOAD item in TOOLS submenu of the Main menu.



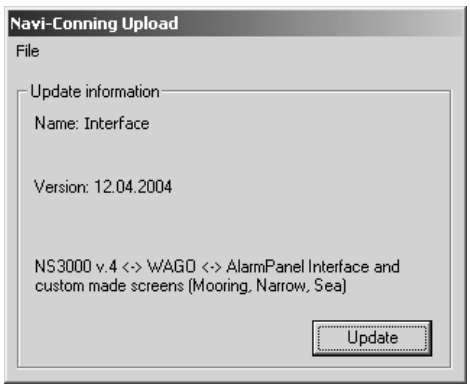
Select OPEN option in FILE menu in “Navi-Conning Upload” utility window.



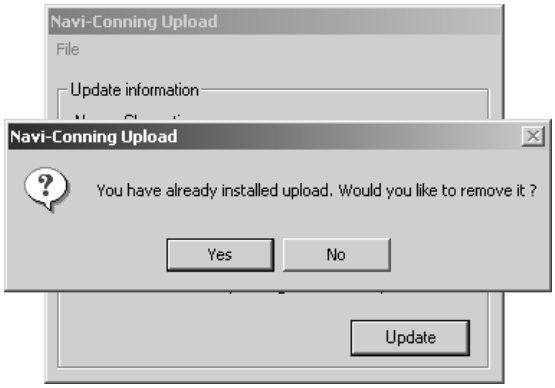
Specify the path to the file with `*.ain` extension containing new options of “Navi-Conning 3000” program.



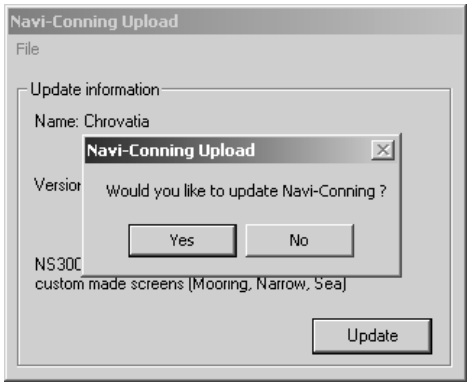
Press “Open” button.



Press “Update” button.

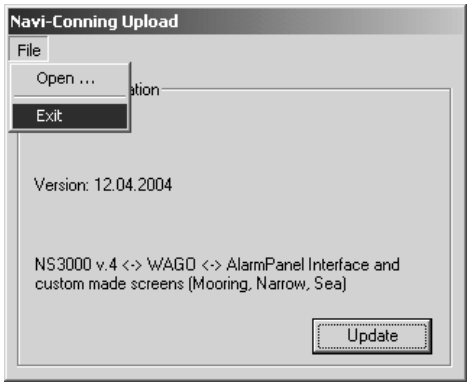


Press “Yes” button.

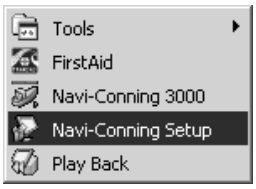


Press “No” button.

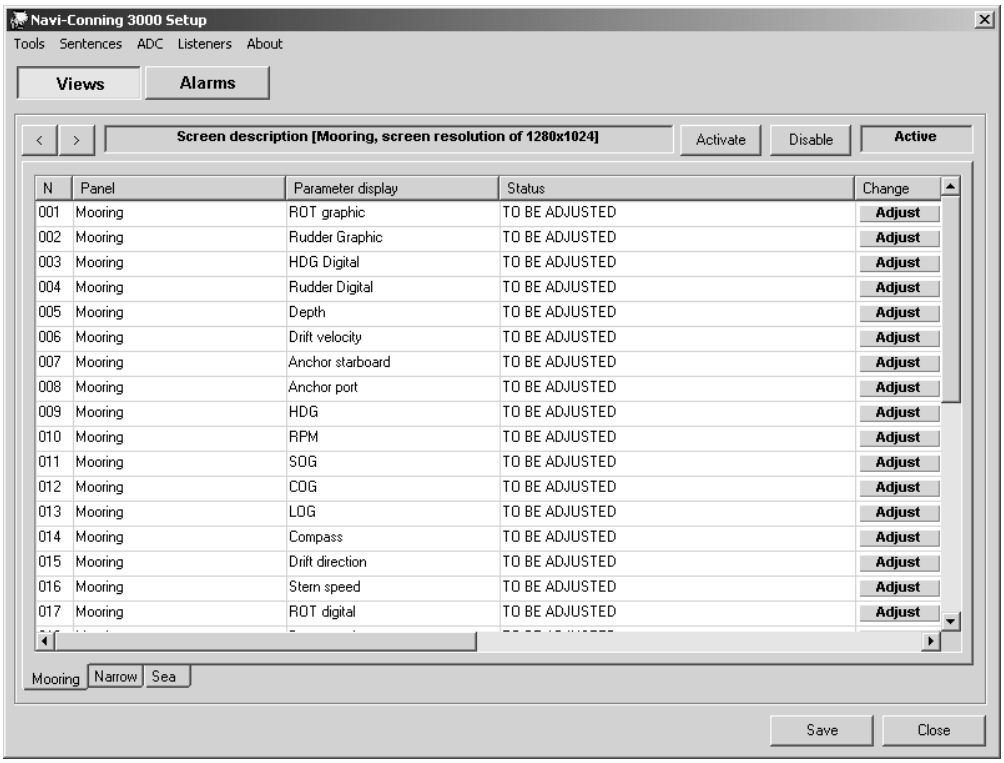
To exit from “Navi-Conning Upload” utility, select EXIT option in FILE menu.



Turn on the “Navi-Conning Setup” utility.



After the program loading, the “Navi-Conning 3000 Setup” screen will be displayed.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

Press “Save” button to save the updated configuration.

Press “Close” button in the right bottom part of the “Navi-Conning 3000 Setup” screen, the program will be closed.

UPDATING NC 3000 PROGRAM

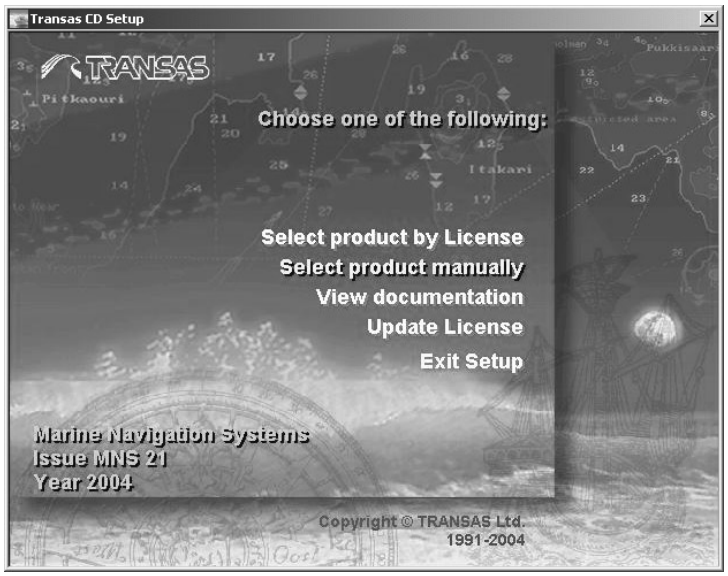
Make a backup copy of the created NC 3000 configuration by using "Backup" function (see paragraph **Saving of the Generated Configuration**).

ATTENTION!

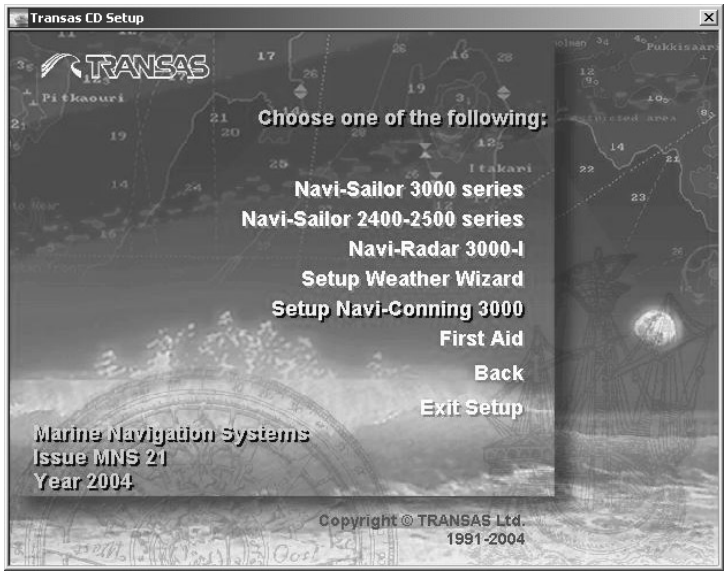
When NC 3000 is re-installed, all the trace-files containing archive information will be deleted. Save *C:\Transas\NC3000\Trace* folder as required to another directory.

Insert "MARINE NAVIGATION SYSTEMS" CD in the disk drive.

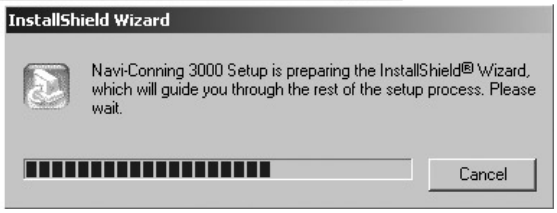
In several seconds, "Transas CD Setup" autoload program will offer you a dialogue window for the selection of the product to be installed (this operation can be performed "manually" by selecting `Setup.Exe` file in the disk root directory):

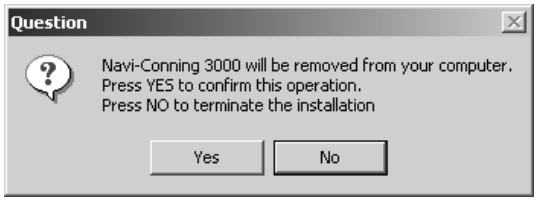


Select "Select product manually" line: the line turns yellow.



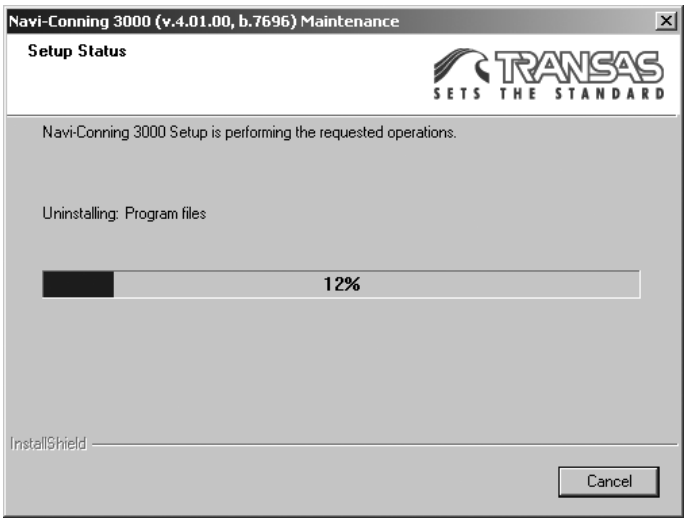
Select “Setup Navi-Conning” line: the line turns yellow.

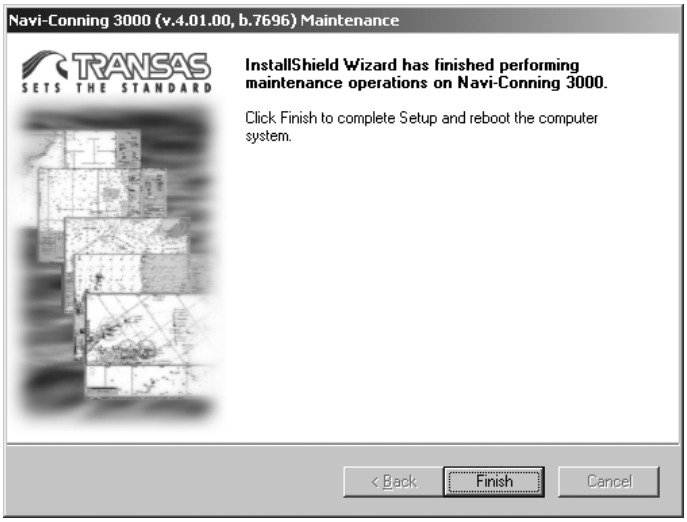

InstallShield Wizard
Navi-Conning 3000 Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.
Cancel



Press “Yes” button.

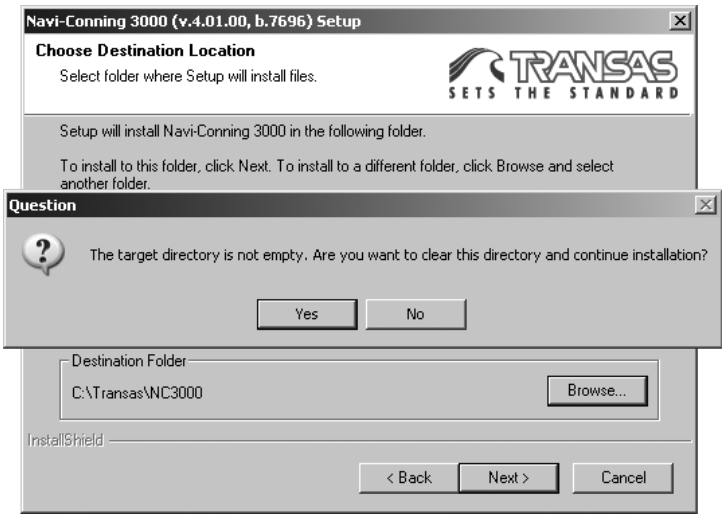
NC 3000 program will be deleted.




Navi-Conning 3000 (v.4.01.00, b.7696) Maintenance
TRANSAS
SETS THE STANDARD
InstallShield Wizard has finished performing maintenance operations on Navi-Conning 3000.
Click Finish to complete Setup and reboot the computer system.
< Back
Finish
Cancel

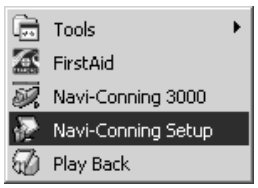
Press “Finish” button. The computer will be re-started.

Perform the NC 3000 program installation anew specifying the new license (see paragraph **Software Installation**). When asked “Do you want to clear directory and continue installation?” press “Yes” button.

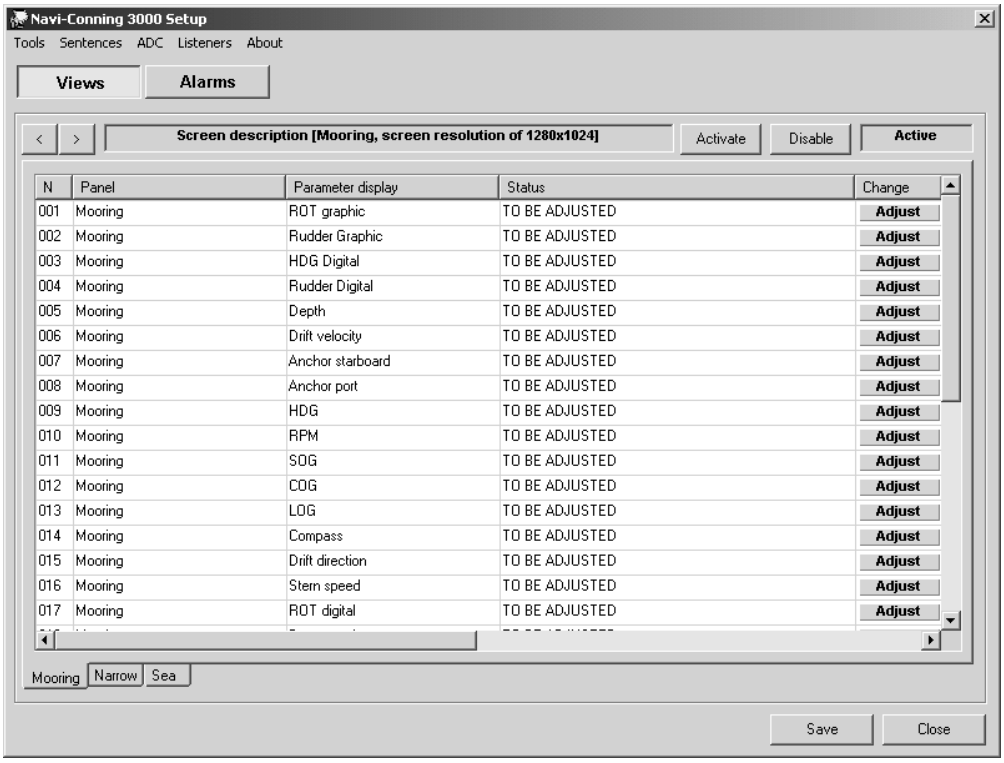

Navi-Conning 3000 (v.4.01.00, b.7696) Setup
Choose Destination Location
Select folder where Setup will install files.
TRANSAS
SETS THE STANDARD
Setup will install Navi-Conning 3000 in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Question
The target directory is not empty. Are you want to clear this directory and continue installation?
Yes
No
Destination Folder
C:\Transas\NC3000
Browse...
InstallShield
< Back
Next >
Cancel

After the end of the installation and computer restart, use “Restore” utility to restore the adjusted NC 3000 configuration.

Turn on the “Navi-Conning Setup” utility.



After the program loading, the “Navi-Conning 3000 Setup” screen will be displayed.


Navi-Conning 3000 Setup
Tools Sentences ADC Listeners About
Views
Alarms
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N Panel Parameter display Status Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

Press “Save” button to save the updated configuration.

Press “Close” button in the right bottom part of the “Navi-Conning 3000 Setup” screen, the program will be closed.

CHAPTER 4

Troubleshooting

This chapter explains procedures for troubleshooting and fault reporting.

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This chapter contains:

Troubleshooting via First Aid Utility 145
General 145
Elimination of Faults Caused by the Breaking of the Dongle 146
Activation of “Frozen” Dongle 147
Evaluation License Expired 148
Hang-up or Impossible to Start the NC 148
No Information Arrives from Sensor 149
No Information Arrives from the Transas Conning Box 153
Drawing of Troubleshooting Report 154
How to Send a Request for Repairs 156

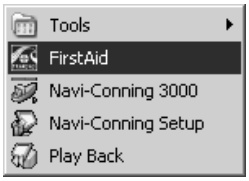
TROUBLESHOOTING VIA FIRST AID UTILITY

General

Troubleshooting in the course of the NC operation is done by using “First Aid” utility. In this case, “First Aid” utility can perform the following functions:

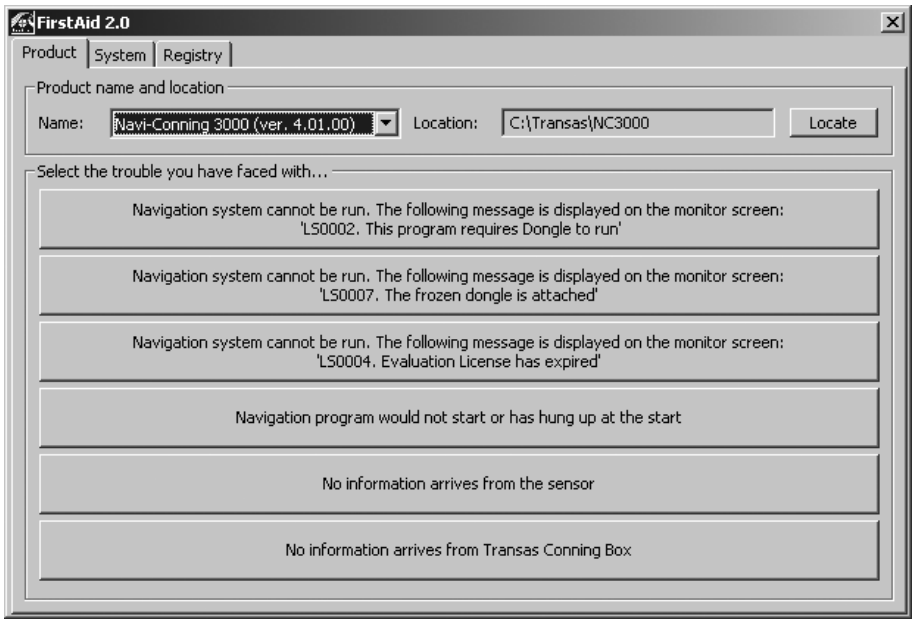
- To offer recommendations on the elimination of typical faults which occur in operating the NC system;
- To draw a troubleshooting report to be sent to the company for the following servicing;
- To register the NC product with Sesame System.

Turn on the “First Aid” utility by selecting the appropriate name in the Main menu.



After the program loading, the “First Aid” screen will be displayed.

Arranged in the utility’s Main window buttons with a brief description of typical problems covered by the utility.


FirstAid 2.0
Product
System
Registry
Product name and location
Name:
Navi-Conning 3000 (ver. 4.01.00)
Location:
C:\Transas\NC3000
Locate
Select the trouble you have faced with...
Navigation system cannot be run. The following message is displayed on the monitor screen: 'LS0002. This program requires Dongle to run'
Navigation system cannot be run. The following message is displayed on the monitor screen: 'LS0007. The frozen dongle is attached'
Navigation system cannot be run. The following message is displayed on the monitor screen: 'LS0004. Evaluation License has expired'
Navigation program would not start or has hung up at the start
No information arrives from the sensor
No information arrives from Transas Conning Box

To receive recommendation on the elimination of the problem, which has occurred, press the button whose name corresponds to this fault.

Elimination of Faults Caused by the Breaking of the Dongle

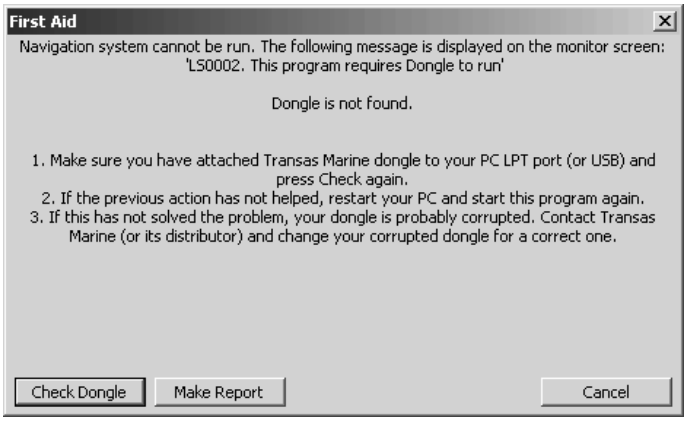
Press **Navigation system cannot be run. The following message is displayed on the monitor screen: "LS0002. This program requires Dongle to run"** button in the utility's Main window.

First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen:
'LS0002. This program requires Dongle to run'
Press "Check Dongle" button to check your dongle.
(You should first close all the running programs and utilities).
Press "Make Report" button to compile a report to be sent to the representative of TRANSAS MARINE Ltd.
Check Dongle
Make Report
Cancel

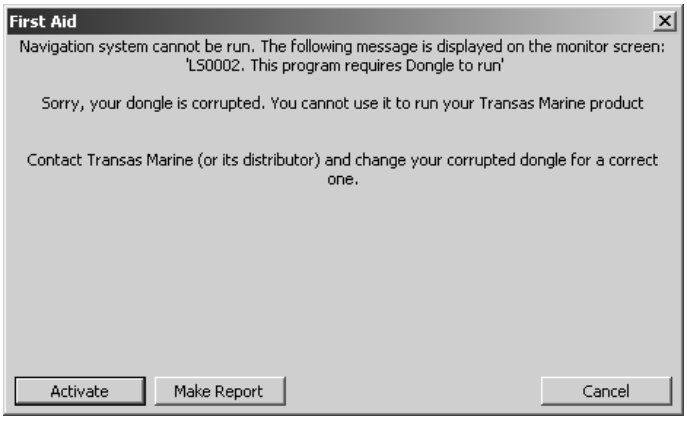
Press "Check Dongle" button.

In this case, there may be the following options of the dongle check results:

- Dongle driver is not installed or dongle is not found;


First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen:
'LS0002. This program requires Dongle to run'
Dongle is not found.
1. Make sure you have attached Transas Marine dongle to your PC LPT port (or USB) and press Check again.
2. If the previous action has not helped, restart your PC and start this program again.
3. If this has not solved the problem, your dongle is probably corrupted. Contact Transas Marine (or its distributor) and change your corrupted dongle for a correct one.
Check Dongle
Make Report
Cancel

- Some errors found in the dongle.


First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen:
'LS0002. This program requires Dongle to run'
Sorry, your dongle is corrupted. You cannot use it to run your Transas Marine product
Contact Transas Marine (or its distributor) and change your corrupted dongle for a correct one.
Activate
Make Report
Cancel

In these cases, it is necessary to follow the utility's recommendations.
The procedure of drawing the troubleshooting report is detailed below.

Activation of “Frozen” Dongle

Press **Navigation system cannot be run. The following message is displayed on the monitor screen: “LS0007. The frozen dongle is attached”** button in the utility’s Main window:

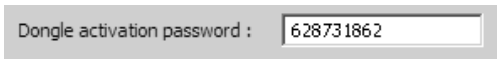
First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen:
'LS0007. The frozen dongle is attached'
Press "Check Dongle" button to check your dongle.
(You should first close all the running programs and utilities).
Press "Make Report" button to compile a report to be sent to the representative of TRANSAS MARINE Ltd.
Check Dongle
Make Report
Cancel

Press “Check Dongle” button.

Activate the dongle by pressing “Activate” button.

First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen:
'LS0002. This program requires Dongle to run'
There are no errors detected on dongle.
Dongle Number: 1701010
Frozen Dongle ID: 43215
To use this frozen dongle you must ACTIVATE it.
To acivate this frozen Dongle please:
1. Send frozen dongle ID (43215) to Transas Marine (or its distributor);
2. Receive Activation Password from Transas;
3. Enter the received password in textbox below and then press Activate.
Dongle activation password :
Activate
Make Report
Cancel

Enter the “frozen” dongle activation password, which should first be received from Transas.

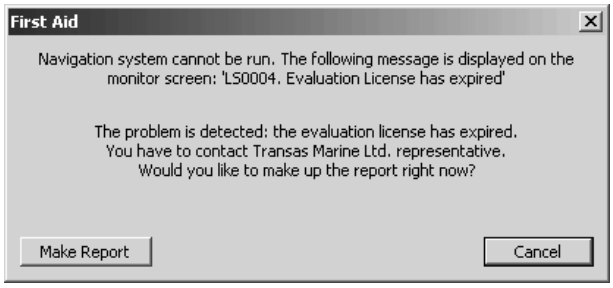


The dongle activation is completed. Close “First Aid” utility and go on with your work with the NC.

First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen:
'LS0002. This program requires Dongle to run'
This frozen dongle has been properly activated.
Dongle Number: 1701010
Frozen Dongle ID: 43215
Now you can use this activated frozen dongle instead of your main dongle to run Transas Marine product.
To exit from the program press Cancel.
Dongle activation password :
628731862
Activate
Make Report
Cancel

Evaluation License Expired

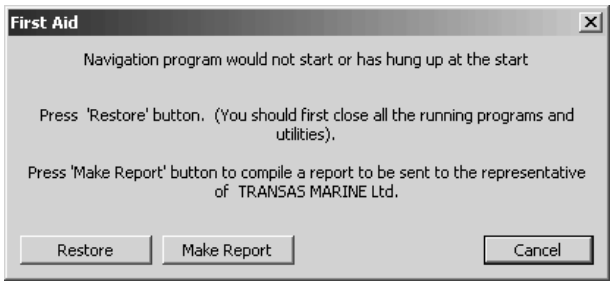
Press **Navigation system cannot be run. The following message is displayed on the monitor screen: "LS0004. Evaluation License has expired"** button in the utility's Main window.


First Aid
Navigation system cannot be run. The following message is displayed on the monitor screen: 'LS0004. Evaluation License has expired'
The problem is detected: the evaluation license has expired.
You have to contact Transas Marine Ltd. representative.
Would you like to make up the report right now?
Make Report
Cancel

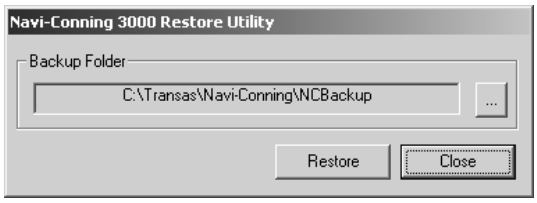
Go on to the procedure for drawing the troubleshooting report (see below).

Hang-up or Impossible to Start the NC

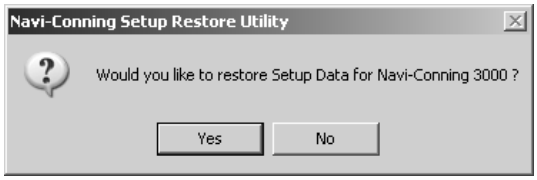
Press **Navigation program would not start or hung up at the start** button in the utility's Main window.


First Aid
Navigation program would not start or has hung up at the start
Press 'Restore' button. (You should first close all the running programs and utilities).
Press 'Make Report' button to compile a report to be sent to the representative of TRANSAS MARINE Ltd.
Restore
Make Report
Cancel

Press "Restore" button.



Specify the path to the folder, which stores the backup copy with the standard configuration and press **Restore** button.



Press "Yes" button.

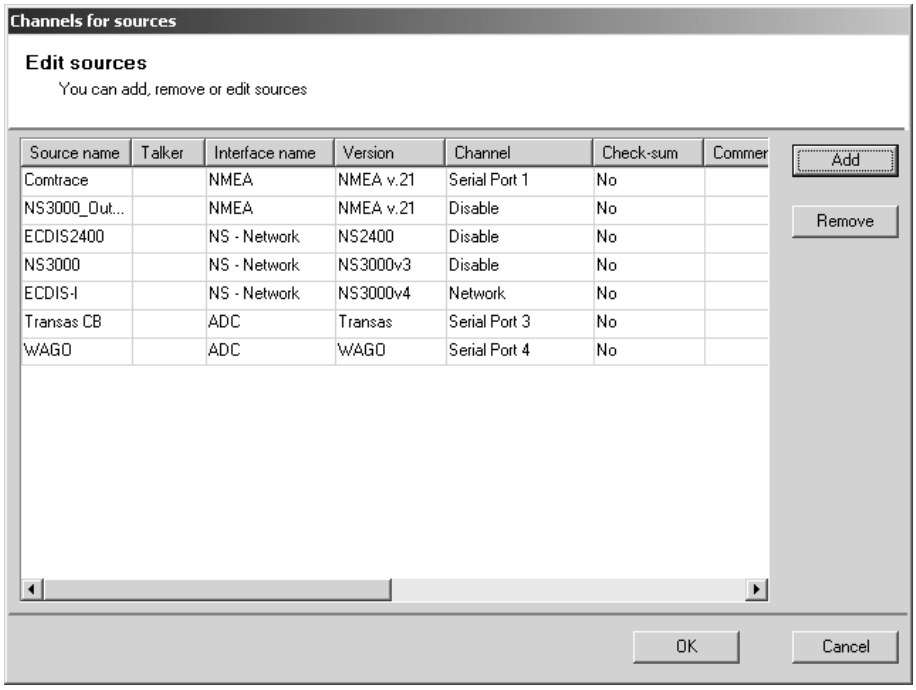
The “Navi-Conning Restore” utility will perform the procedure for the recovery of the NC standard configuration.

Press “OK” button.

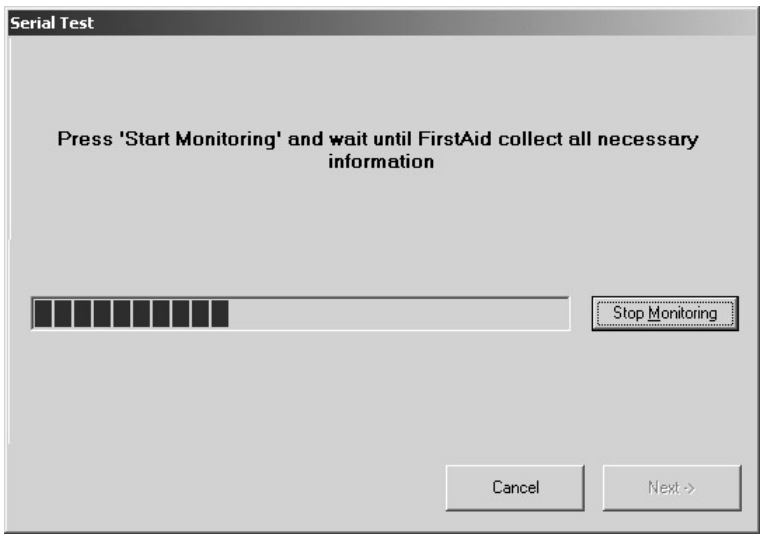
Press “Close” button to exit from “Navi-Conning Restore” utility.

No Information Arrives from Sensor

Press **No information arrives from Source** button in the utility’s Main window.



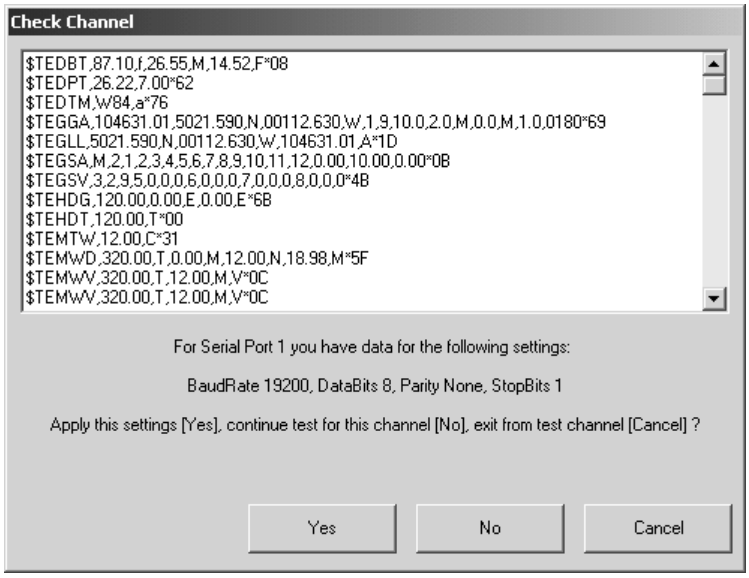
Check that all the connected sources of parameters are set. Set new parameter sources as required. Press “OK” button. Press “Start Monitoring” button.



The program will search for all the possible combinations of settings for the serial port, which the source of parameters is connected to (search may take considerable time). Search is made for the following port settings:

- Baud Rate – data exchange rate of the tested port;
- Data Bits – data bits in the column;
- Parity – data parity;
- Stop Bits – number of stop bits.

As the program detects correct information supplied via the tested port, it will stop the search and will display the following information.

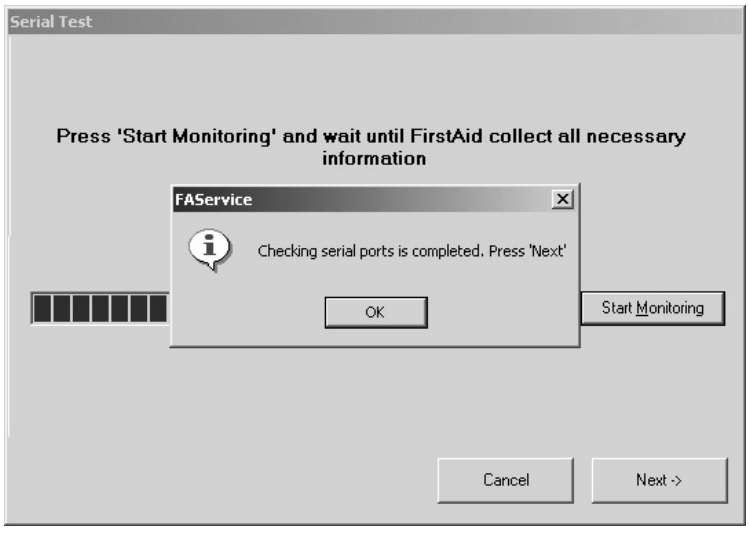


Press “Yes” button to retain the serial port settings found by the program for the further program operation and going on to the testing of the next serial port.

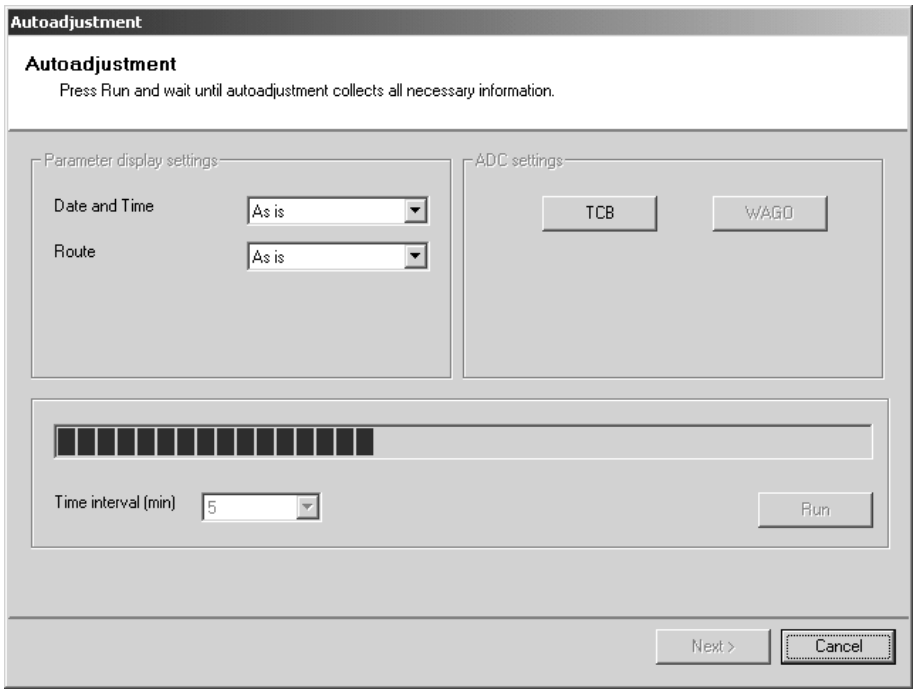
Press “No” button to continue search for the possible combinations of this serial port settings. If there is no correct information for the serial port in question, the program will automatically switch to the testing of the next serial port.

Press “Cancel” button to exit from the serial port setting mode.

Test all the serial ports which parameter sources are connected to and retain the settings found by the program for these ports.

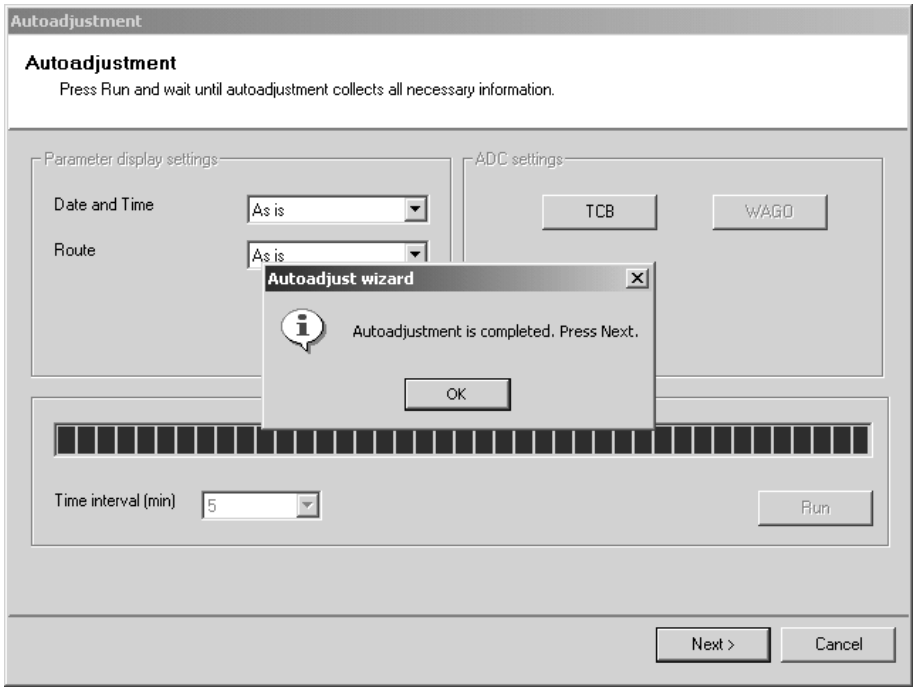


After the end of testing, press “OK” button in the information window, which will appear.



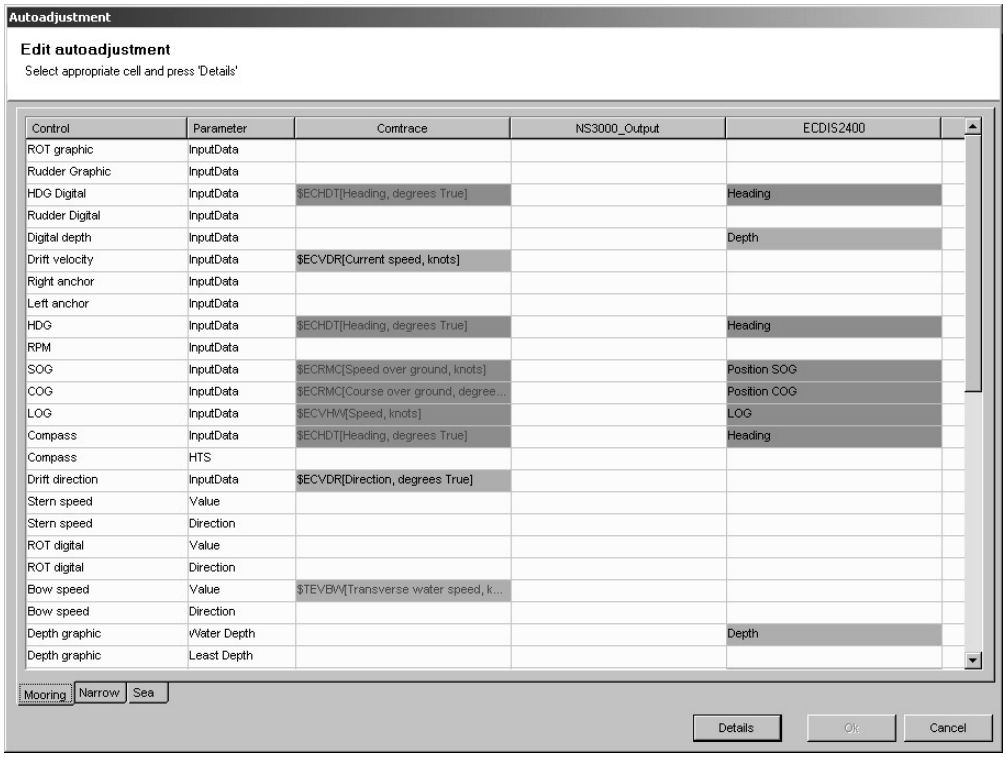
Press “Run” button.

Analysis will be performed with regard to the serial port settings made at the previous step.



After the end of analysis, press “OK” button in the information window, which will appear.

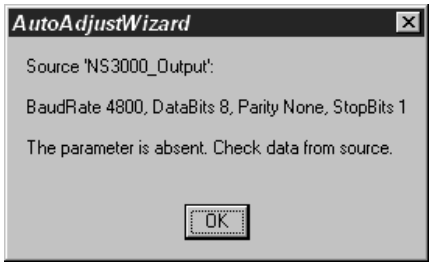
Press the activated “Next>” button.



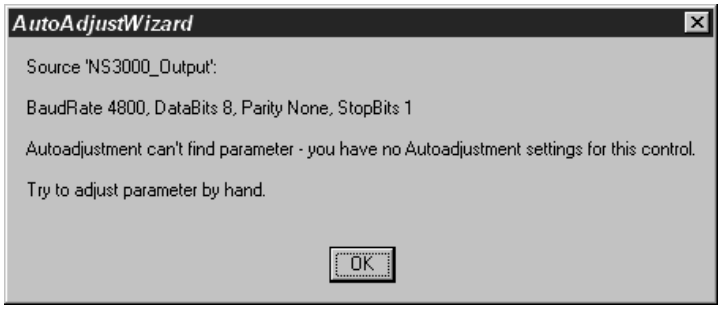
On “Edit Autoadjustment” page, which will open up, parameters found in the process of analysis will be displayed next to the pertinent controls in the settings table.

To obtain information on the parameter controls, which are being adjusted, check the appropriate table cell with the cursor and press “Details” button. The information window will specify the following information:

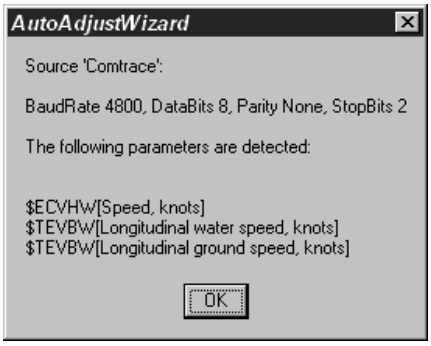
- The parameter is absent for the specified control, it is necessary to check the source of parameters;


AutoAdjustWizard
Source 'NS3000_Output':
BaudRate 4800, DataBits 8, Parity None, StopBits 1
The parameter is absent. Check data from source.
OK

- There is no appropriate parameter for the specified control in the Autoadjustment list, parameters should be adjusted manually;


AutoAdjustWizard
Source 'NS3000_Output':
BaudRate 4800, DataBits 8, Parity None, StopBits 1
Autoadjustment can't find parameter - you have no Autoadjustment settings for this control.
Try to adjust parameter by hand.
OK

- All the relevant parameters are listed for the specified control.

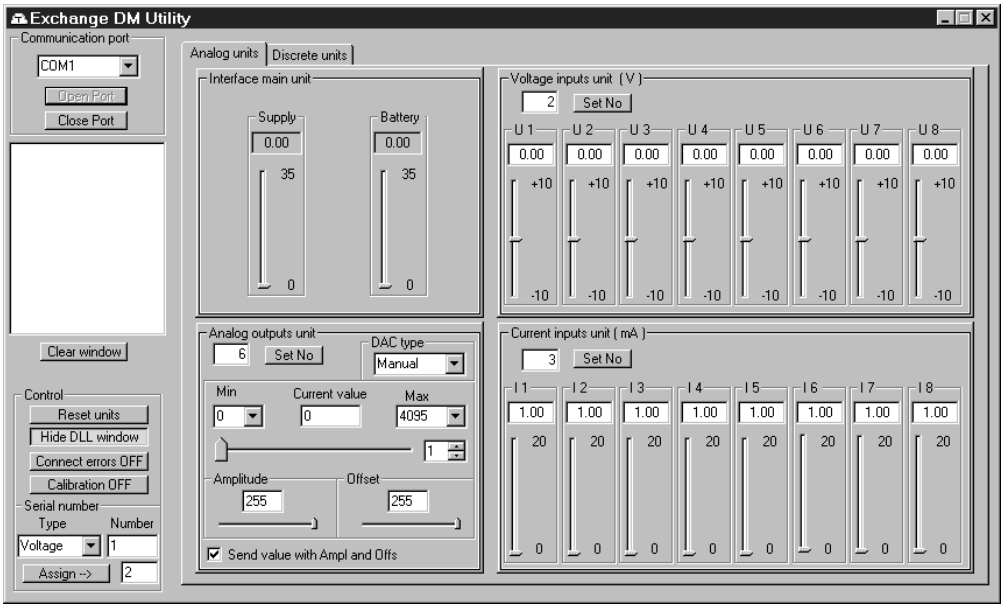


Press “Cancel” button to finish the check of settings and exit to the “First Aid” utility start window.

No Information Arrives from the Transas Conning Box

Press **No information arrives from Transas Conning Box** button in the utility’s Main window.

Transas Conning Box testing utility will be run.

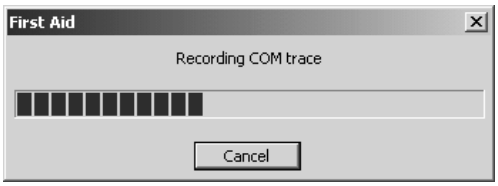


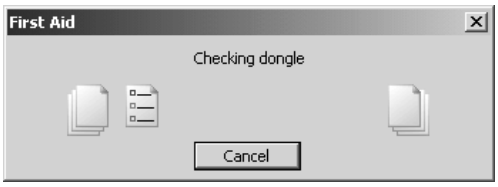
Use “Exchange DM” utility to check the Transas CB units (for the description of “Exchange DM” utility, see **Annex E**).

DRAWING OF TROUBLESHOOTING REPORT

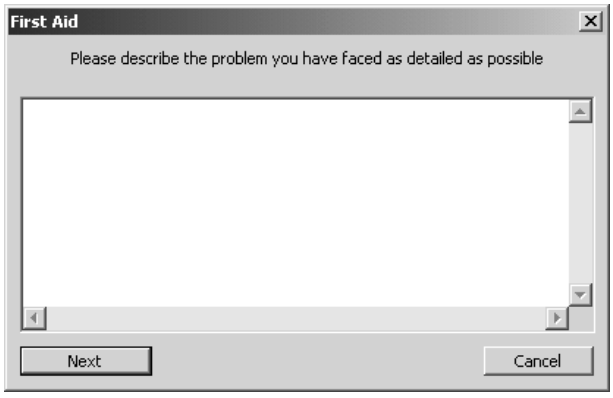
To switch to the procedure for drawing the troubleshooting report, press “MakeReport” button in the bottom part of the utility windows containing recommendations for eliminating faults if this operation is available at this stage.

The utility starts collecting information on the system settings.





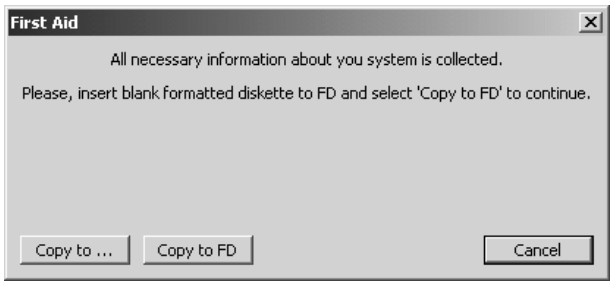
Enter the description of the problem as required.



Press “Next” button.

The collected registration information is archived.

Save the registration information.

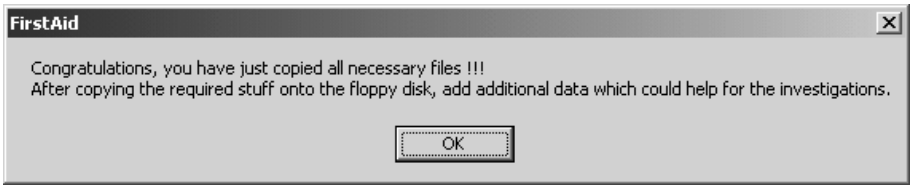

First Aid
All necessary information about you system is collected.
Please, insert blank formatted diskette to FD and select 'Copy to FD' to continue.
Copy to ...
Copy to FD
Cancel

Press “Copy to FD” button.

Note: For an alternative storage of registration information, any other available media can be used. To save registration information in these media, press “Copy to…” button and specify the path in the dialogue box, which will appear.

Insert 3.5' diskette in the disk drive. Depending on the size of information to be saved, several 3.5' diskettes may be required.

Press “OK” button.


FirstAid
Congratulations, you have just copied all necessary files !!!
After copying the required stuff onto the floppy disk, add additional data which could help for the investigations.
OK

The procedure of drawing the troubleshooting report is completed.

HOW TO SEND A REQUEST FOR REPAIRS

If you have not succeeded in eliminating the fault by using the procedures described above, you should send a notification on failure. You should send the following information IN WRITING to the company in any way possible:

1. TO: Ship Agent address.
2. CC: Transas Ltd.

Fax: +44 (0) 2392-674048

E-mail: support@transas.co.uk

PLEASE ARRANGE SERVICE VIA TRANSAS MARINE AS FOLLOWS:

SHIP'S NAME:

SHIP'S OWNER:

NAME OF EQUIPMENT (HARDWARE IN USE):

SERIAL NUMBER:

DONGLE NUMBER:

DATE OF COMISSIONING: (in accordance with installation report)

DESCRIPTION OF FAULT: Diskette with information collected with the use of "First Aid" utility.

ETA/ETD (DATE, PORT): name of the port and estimated dates and time of arrival and departure.

WARNING!

No request for warranty/service repair drawn in an arbitrary form, or a verbal request will be taken into account.

ANNEX A

Additional Settings of Navi-Conning

This annex provides a description of the NC program's additional settings and of NMEA editor.

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This chapter contains:

Adjustment of NC Environment.....161
Creating and Editing of Measurement Unit Database.....161
Setup of Serial Ports 163
Adjustment of NC Operation with Transas Conning Box.....166
Adjustment of NC Operation with WAGO Conning Box.....175
Predictor Adjustment.....182
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Parameters Deletion 217
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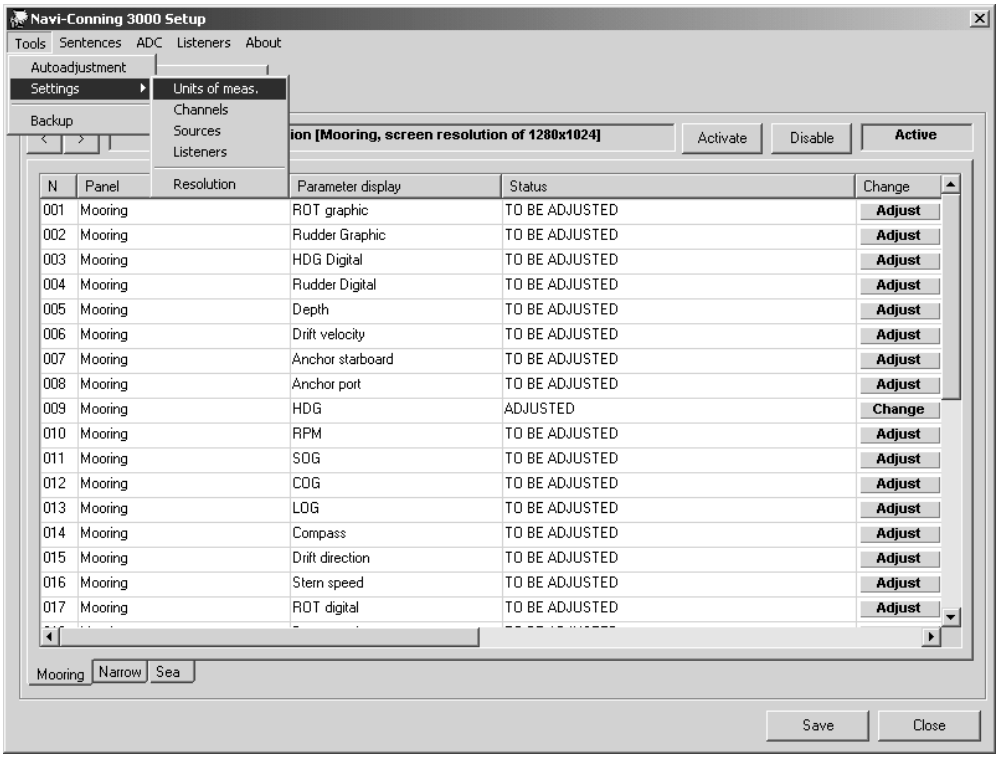
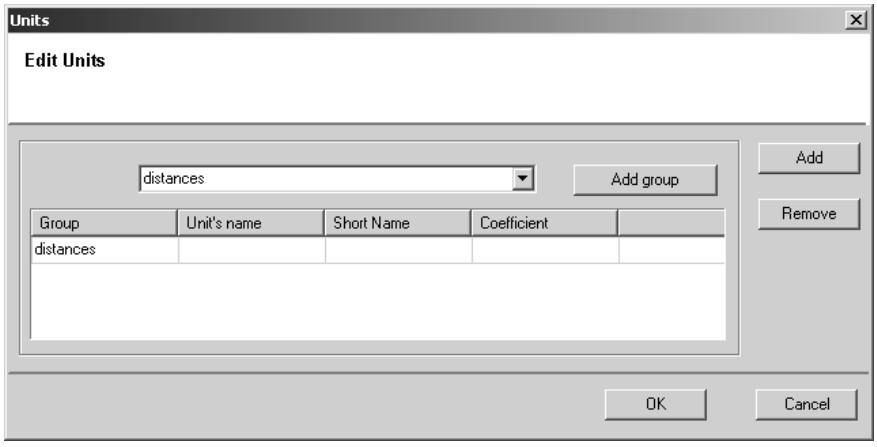
ADJUSTMENT OF NC ENVIRONMENT

Creating and Editing of Measurement Unit Database

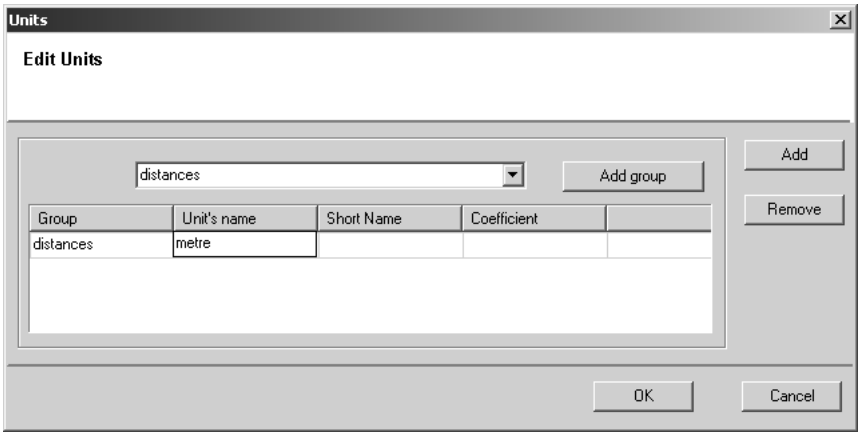
Open TOOLS menu of the Main menu.



In TOOLS menu, which will open up, select UNITS OF MEAS. option of SETTINGS submenu. To create a new group of measurement units, enter its name in the box to the left of “Add Group” button, and press the button.

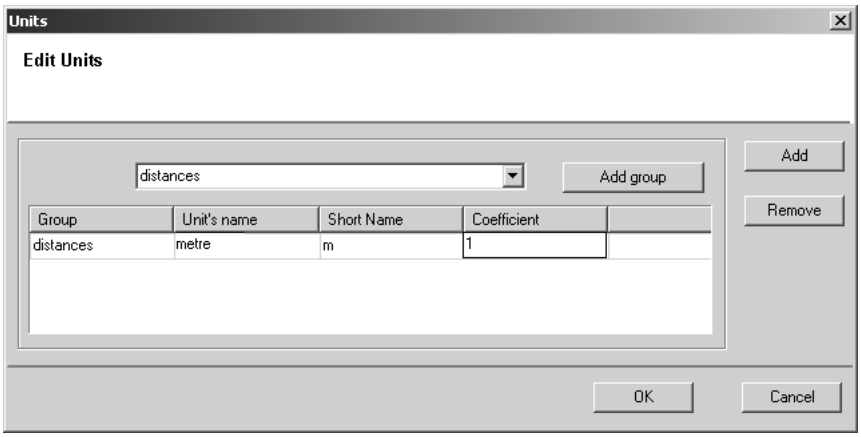


A line with the name of the added group will appear in the measurement unit table. Position the cursor on a cell in “Unit’s Name” column and double click the left trackball/mouse button. Enter the measurement unit name and press <Enter>.

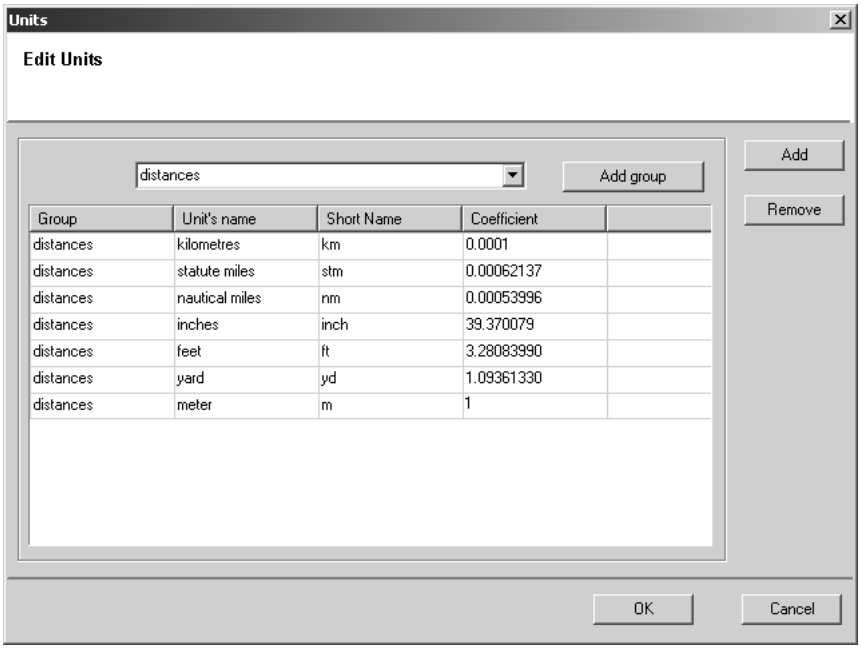


Use a similar procedure to enter the following characteristics of measurement units:

- "Short Name" – short name of a measurement unit which will be shown on the control;
- "Coefficient" – factor for converting the entered measurement unit to the system used by the NC. The entered factor shows the number to multiply by the parameter value processed by the NC in order to obtain this value in the necessary measurement units.



Use "Add" button to enter the required number of measurement units in the given group. A conversion factor should be specified for each measurement unit.



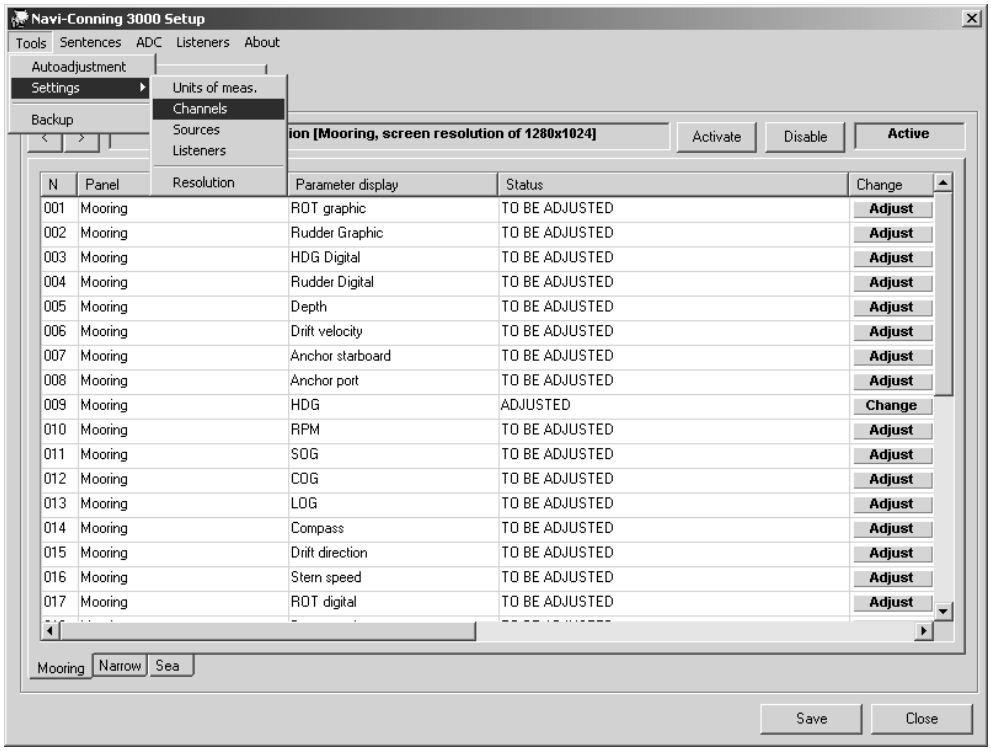
By using “Add Group” button, add the required number of measurement unit groups.

Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

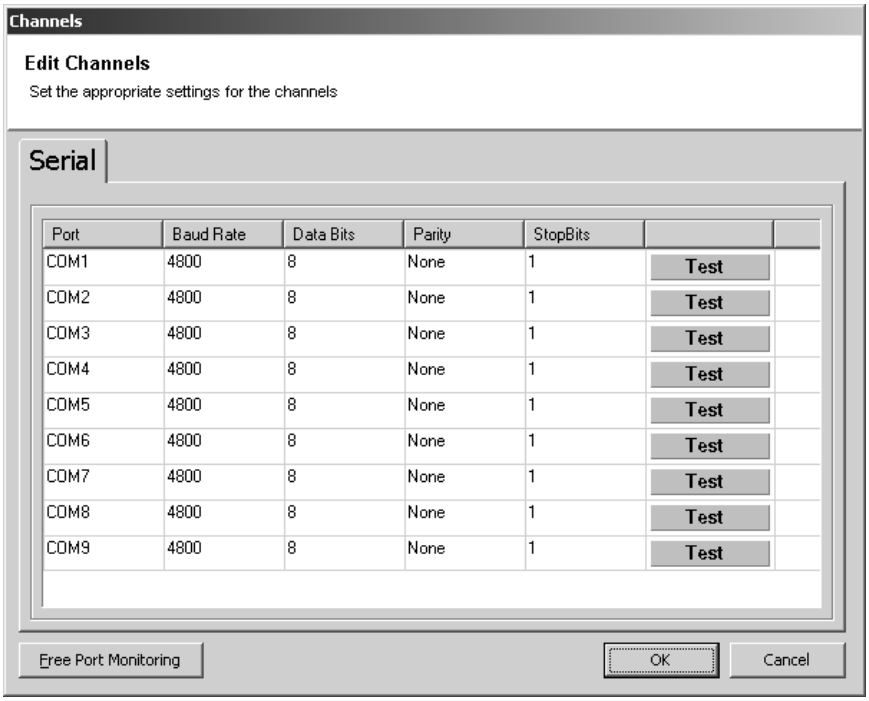
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

Setup of Serial Ports

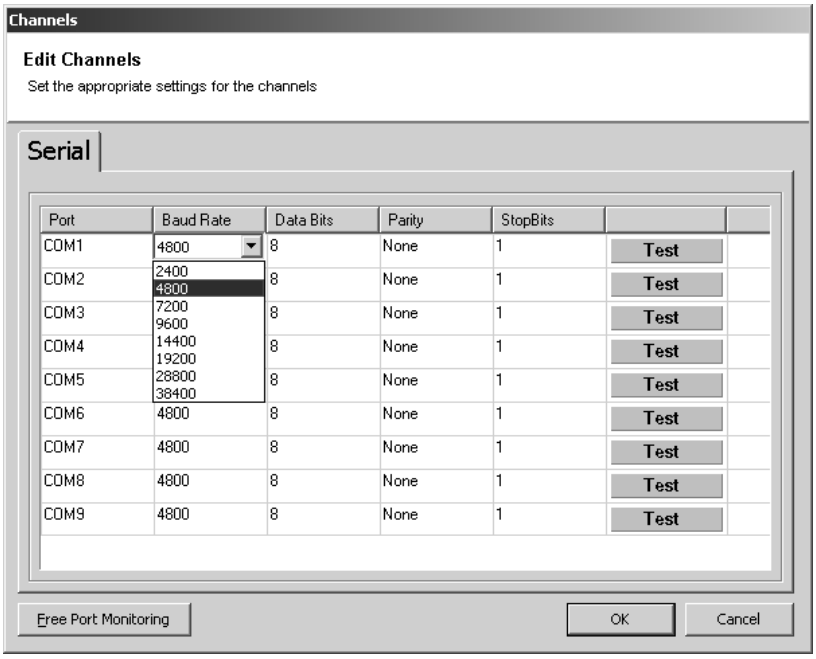
Open TOOLS menu of the Main menu.



In TOOLS menu, which will open up, select CHANNELS option of SETTINGS submenu.



To edit data exchange rate, position the cursor on a cell in “Baud Rate” column in the row of the port, which is being handled, and double click the left trackball/mouse button. Press button in the right hand part of the cell. In the list, which will open up, select the required value.

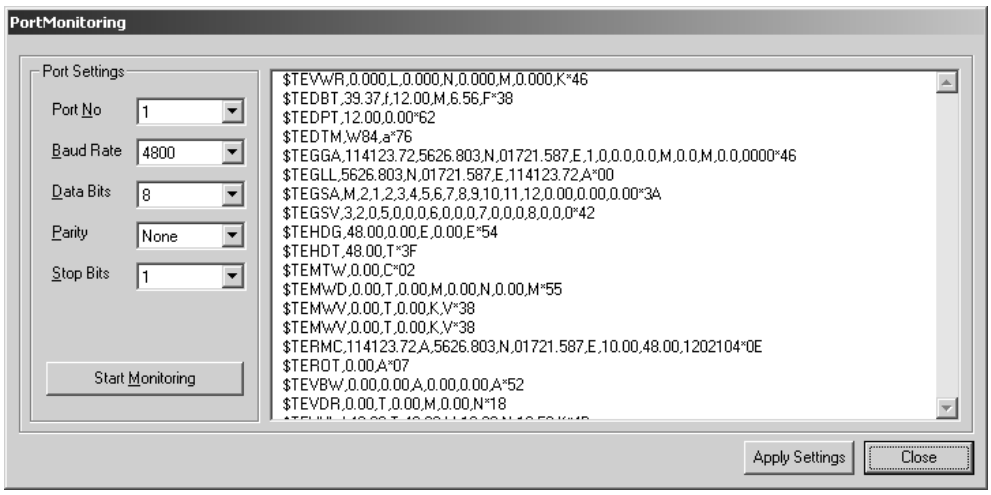


Use a similar procedure to set the following values:

- Data bits in “Data Bits” column;
- Data parity in “Parity” column;
- Number of stop bits in “StopBits” column.

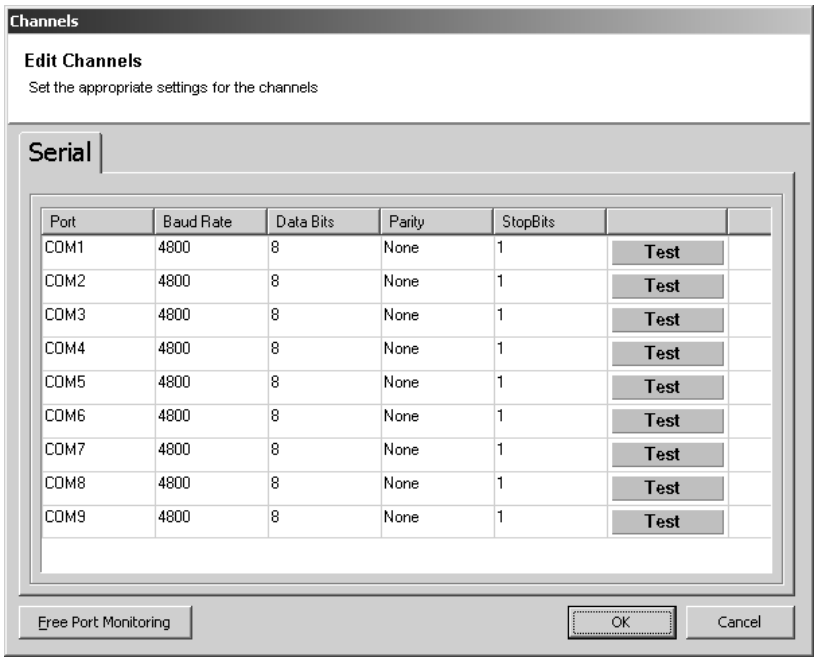
To monitoring the port adjustment, press “Test” in corresponding row or “Free Port Monitoring” button.

Enter the number of the port, which is being edited, in **Port No** line of “Port Monitoring” window which will open up. Press “Start Monitoring” button.



If the settings are correct, the Information Panel will display data supplied to the port, which is being set up.

To end data monitoring, press “Stop Monitoring” button. Press “Close” button to exit from “Port Monitoring” window.

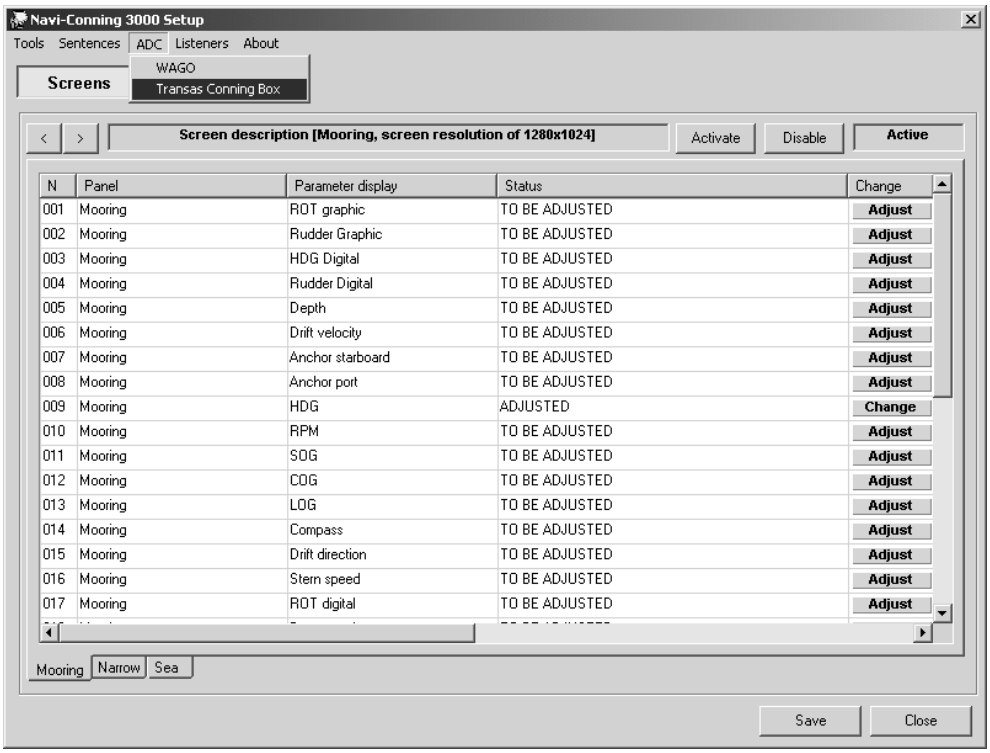


Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

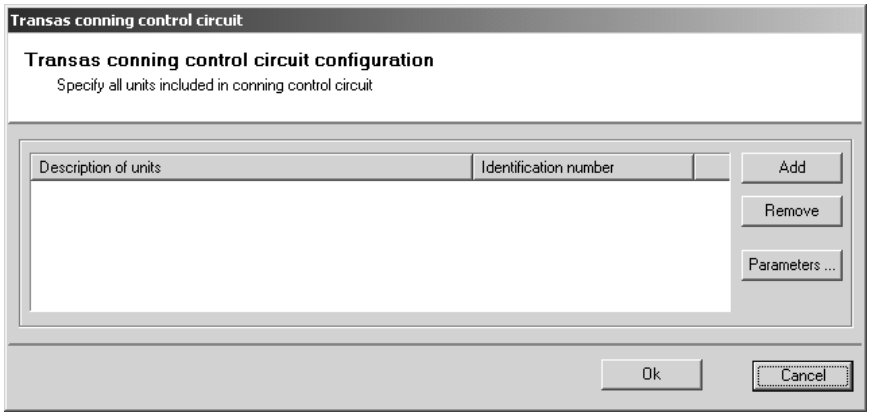
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

Adjustment of NC Operation with Transas Conning Box

Open ADC menu of the Main menu.

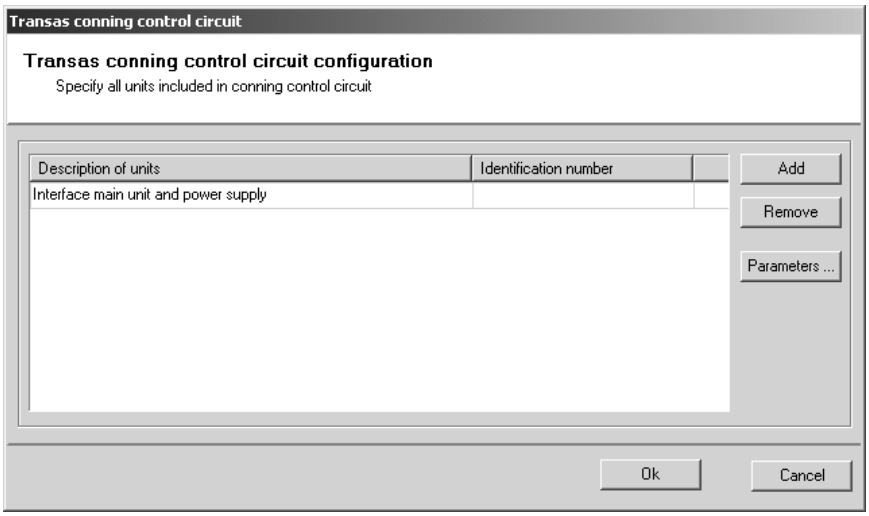

Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
WAGO
Transas Conning Box
Screens
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG ADJUSTED Change
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In ADC menu, which will open up, select TRANSAS CONNING BOX option.

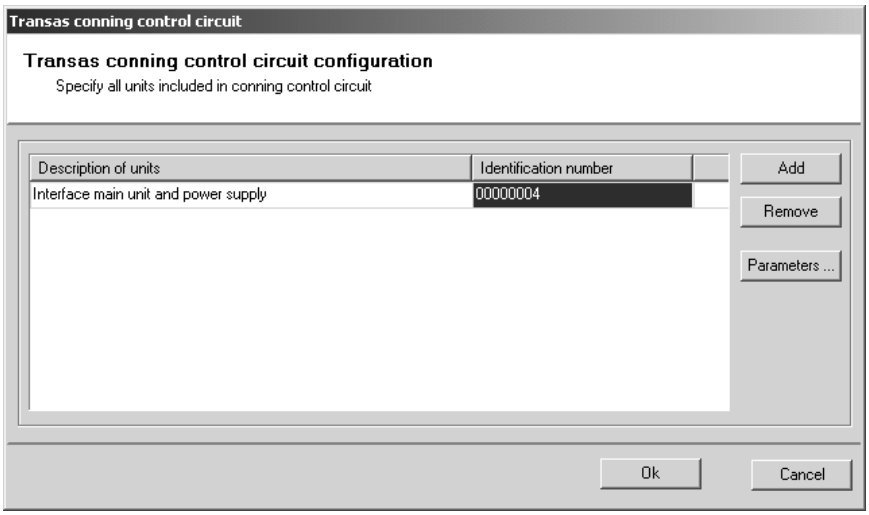


In “Transas conning control circuit configuration” window, which will open up, press “Add” button.

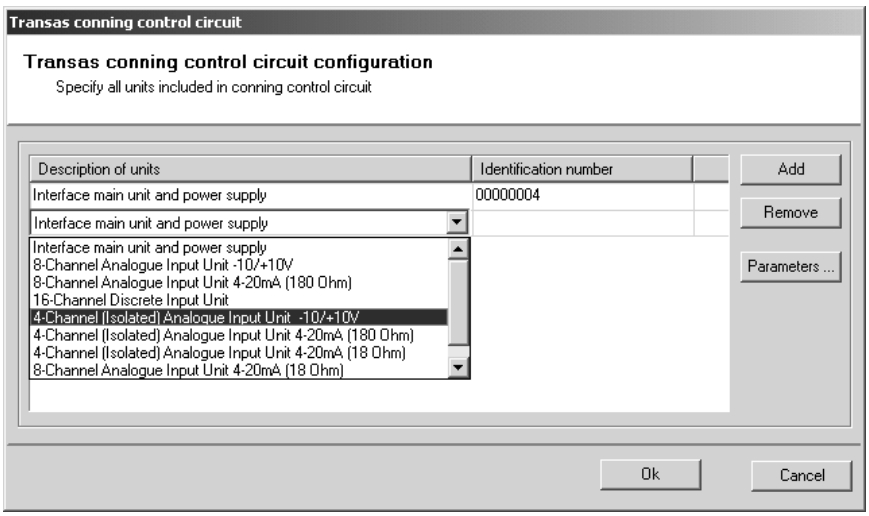
In the “Description of units” column displayed “Interface main unit and power supply” name.



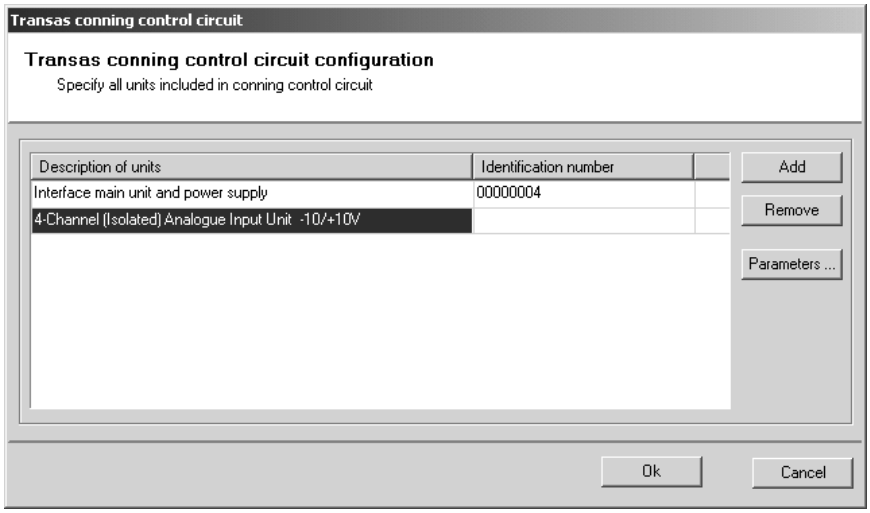
In “Identification number” column, enter ID number of “Interface main unit and power supply” and press <Enter> button.



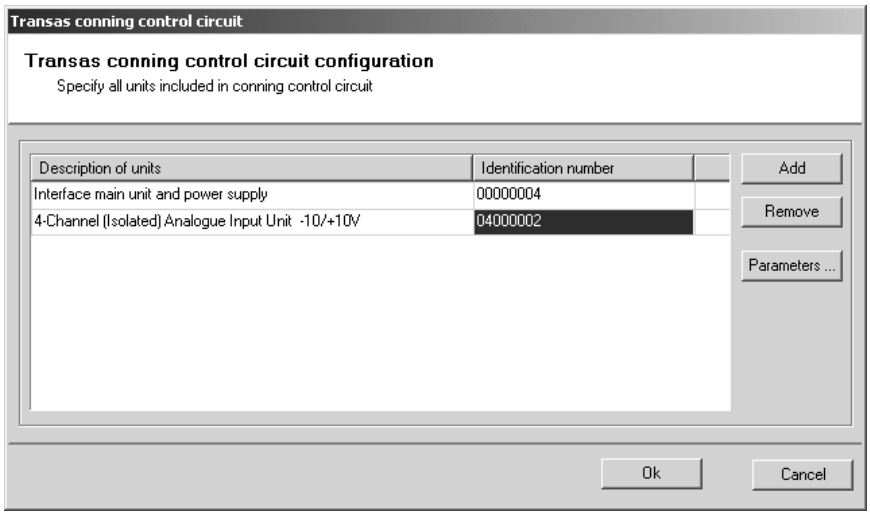
Press “Add” button again. Position the cursor on a cell in “Description of units” column of Conning Box device table and double click the left trackball/mouse button.


Transas conning control circuit
Transas conning control circuit configuration
Specify all units included in conning control circuit
Description of units
Identification number
Interface main unit and power supply
00000004
Interface main unit and power supply
Interface main unit and power supply
8-Channel Analogue Input Unit -10/+10V
8-Channel Analogue Input Unit 4-20mA (180 Ohm)
16-Channel Discrete Input Unit
4-Channel (Isolated) Analogue Input Unit -10/+10V
4-Channel (Isolated) Analogue Input Unit 4-20mA (180 Ohm)
4-Channel (Isolated) Analogue Input Unit 4-20mA (18 Ohm)
8-Channel Analogue Input Unit 4-20mA (18 Ohm)
Add
Remove
Parameters ...
Ok
Cancel

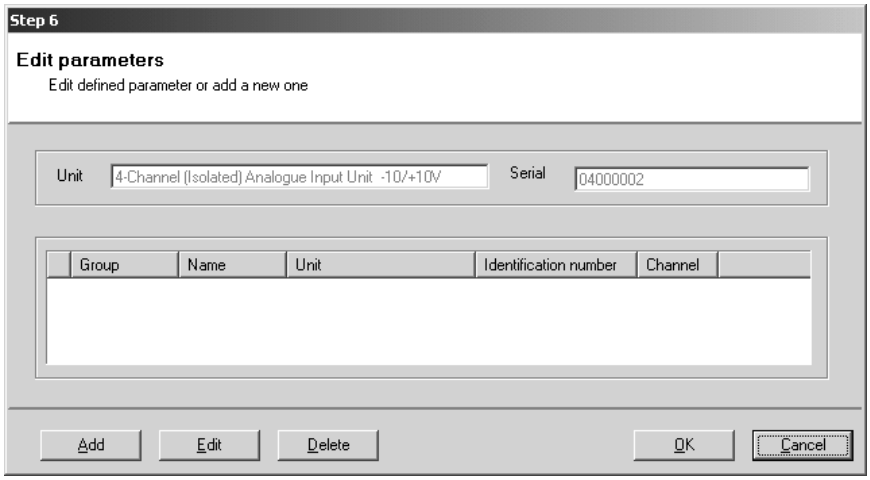
In the drop-down list, which will open up, select the device included in Transas CB.



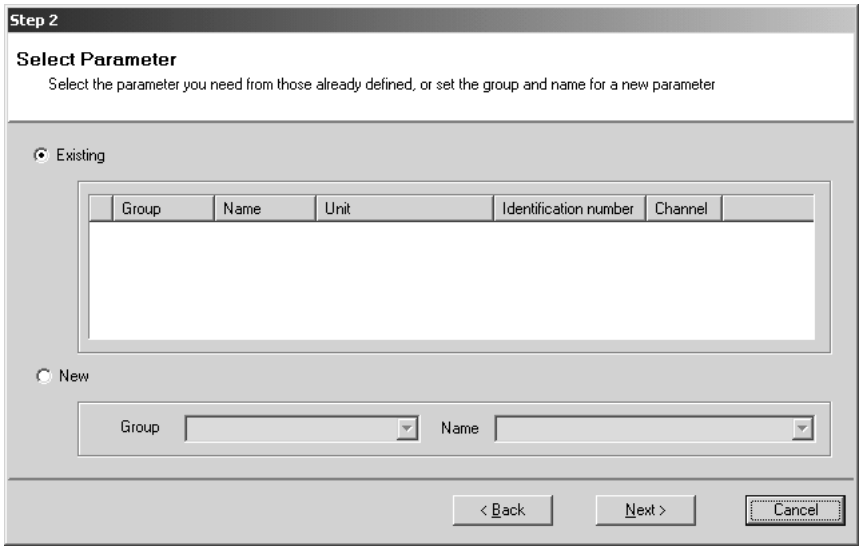
In “Identification number” column, enter ID numbers specified on Transas CB units and press <Enter> button.



Press “Parameters” button to adjust parameters supplied from the installed unit.

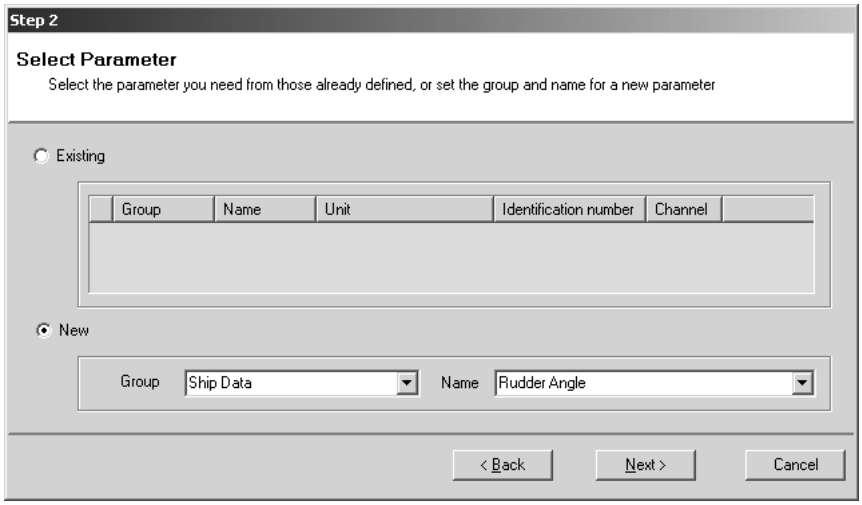


In “Edit parameters” window, which will open up, press “Add” button.



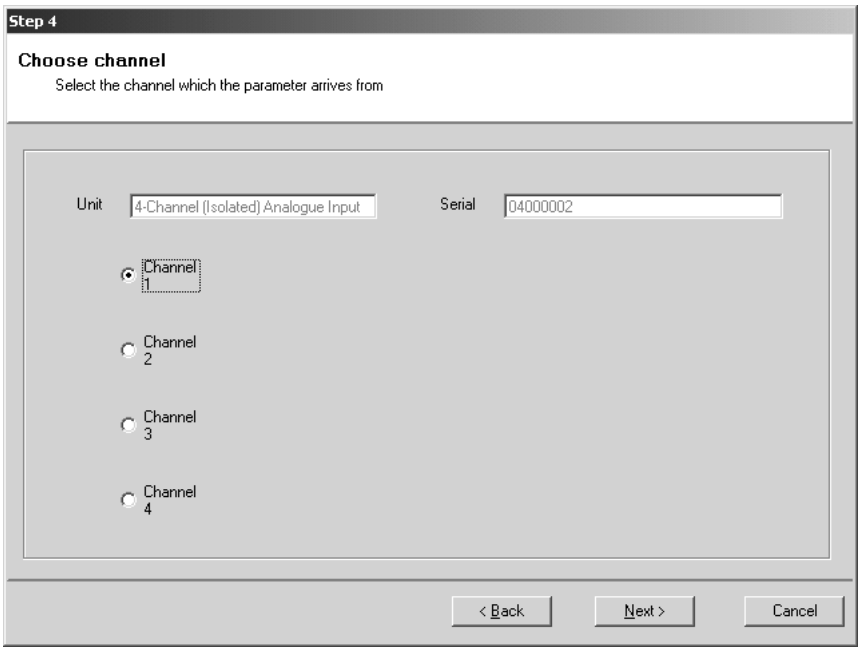
Select **New** option button. Use **Group** input box to enter the name of the parameter group. In **Name** list box, select the necessary parameter from the list.

Note: If a parameter not specified in the list is entered in **Name** box, there can be no automatic adjustment of parameters from the Transas Conning Box to the Screen Views indicators.



Press “Next>” button.

Select the channel of the Conning Box unit, which the parameter is supplied by.



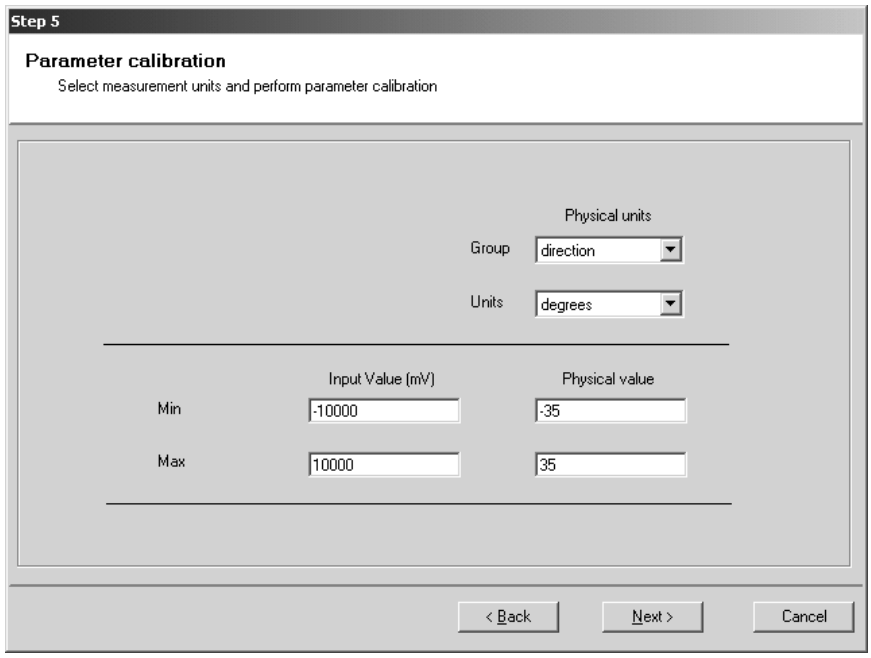
Press “Next>” button.

Select the parameter group and measurement units from the pertinent lists. Use **Input Value** column to set the maximum and minimum value (of current, voltage, etc.), which is supplied to the ADC and corresponds to the maximum and minimum parameter value.

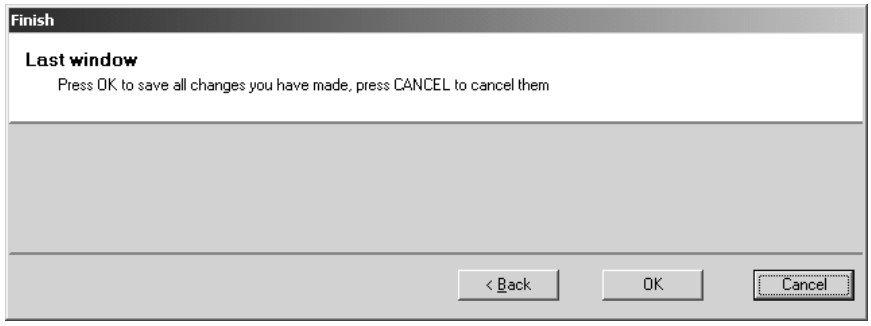
ATTENTION!

In **Input Value** column, the voltage value is required to be set in millivolts (10V are specified as 10000), whereas the current value should be specified in microamperes (for 4 mA 4000 is specified).

In **Physical value** column, set the minimum and maximum physical value of the associated parameter.

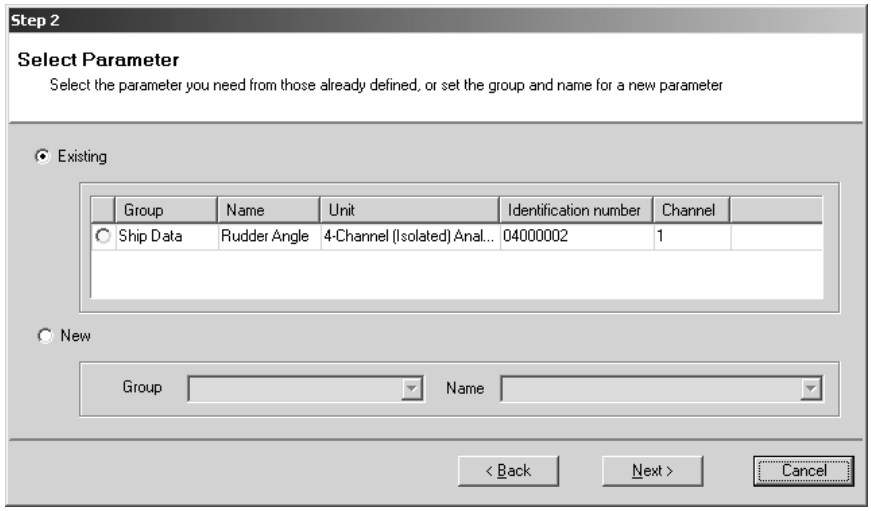


Press “Next>” button.

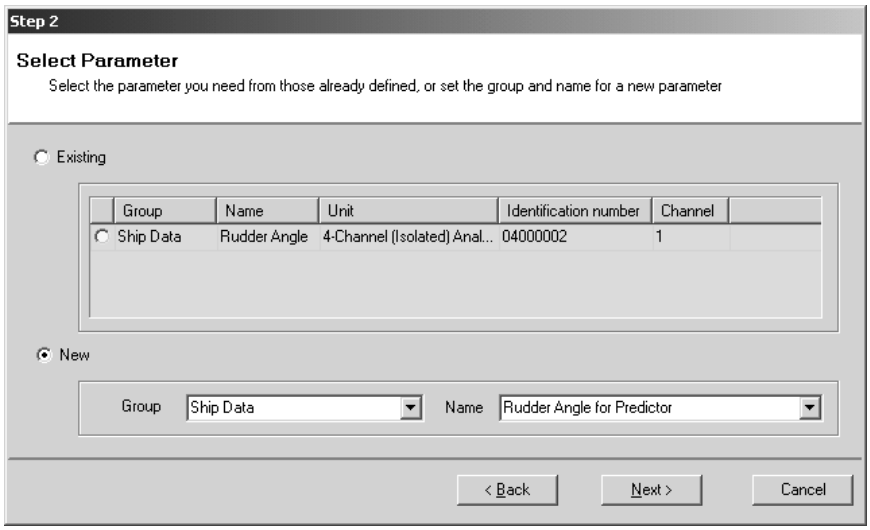


Press “OK” button to save the settings you have made.

Another parameter can be set for the same ADC channel, e.g. a parameter using other measurement units. To do this, press “Add” button in “Edit parameters” window again.

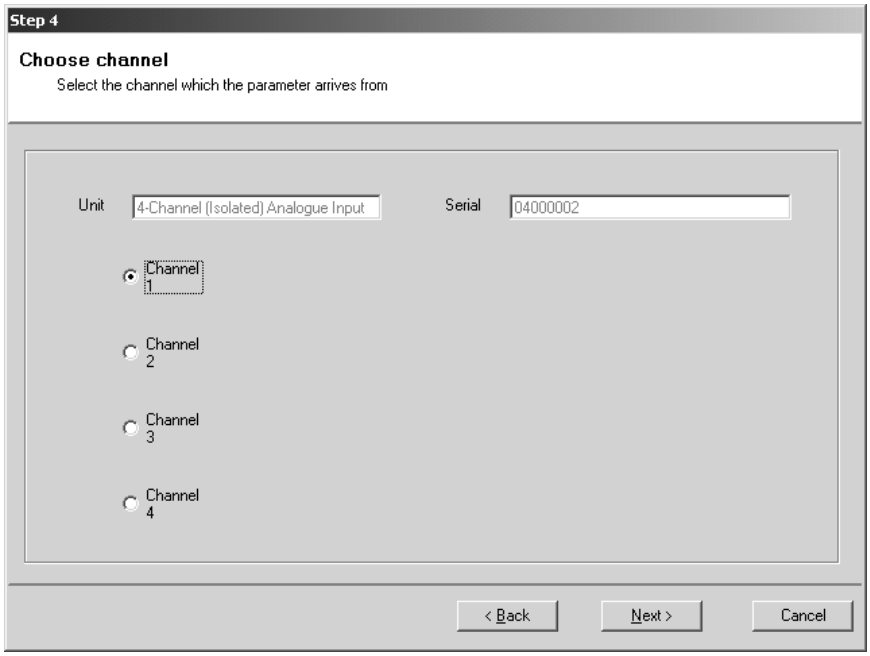


Select **New** option button. Use **Group** box to enter the name of the parameter group. Use **Name** box to enter the parameter name different from that entered before.



Press “Next>” button.

Select the same channel of the Conning Box unit, which the parameter is supplied by.



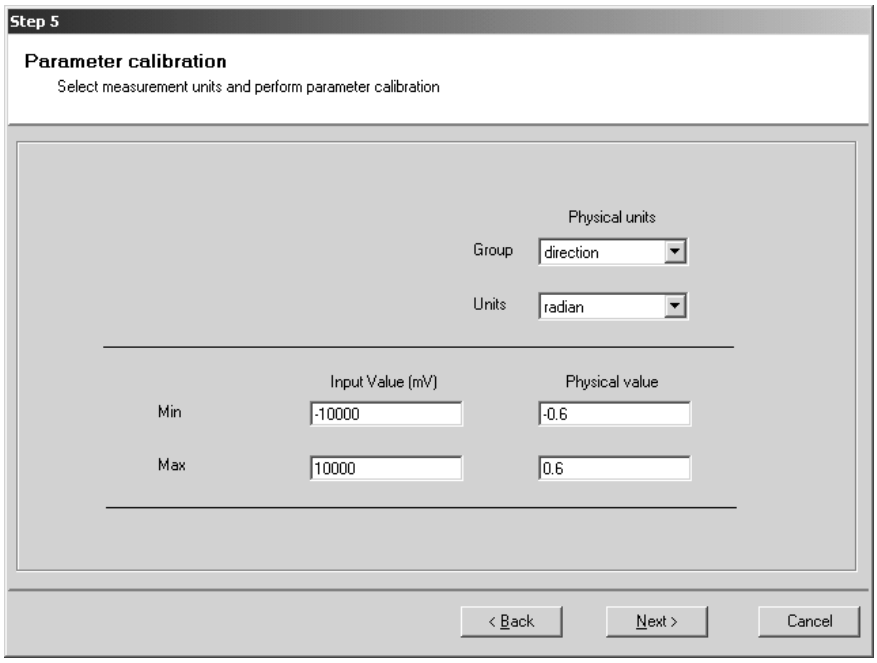
Press “Next>” button.

Select the parameter group and other measurement units from the pertinent lists. Use **Input Value** column to set the maximum and minimum value (of current, voltage, etc.), which is supplied to the ADC and corresponds to the maximum and minimum parameter value.

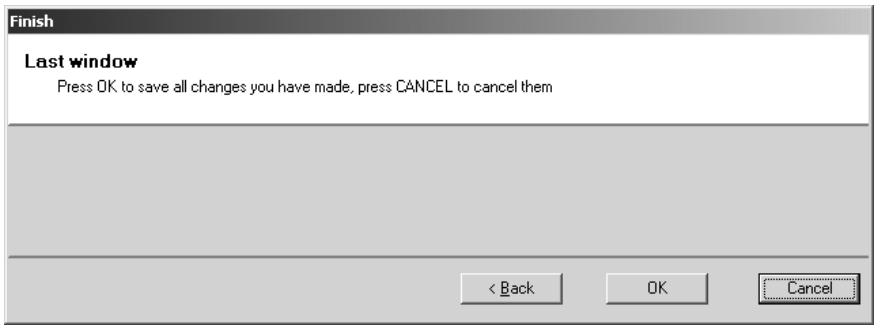
ATTENTION!

In **Input Value** column, the voltage value is required to be set in millivolts (10V are specified as 10000), whereas the current value should be specified in microamperes (for 4 mA 4000 is specified).

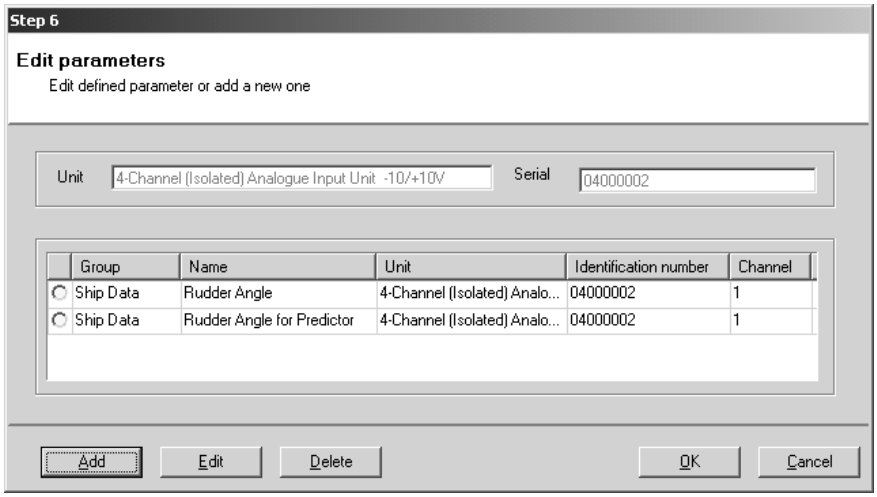
In **Physical value** column, set the minimum and maximum physical value of the associated parameter.



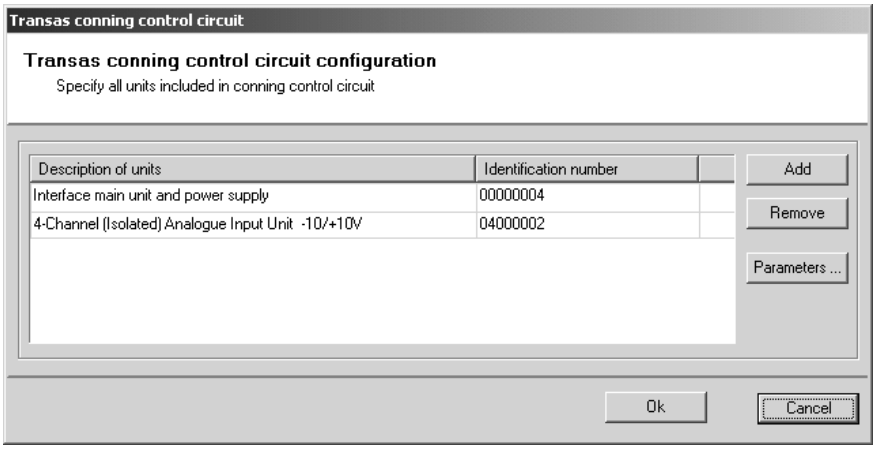
Press “Next>” button.



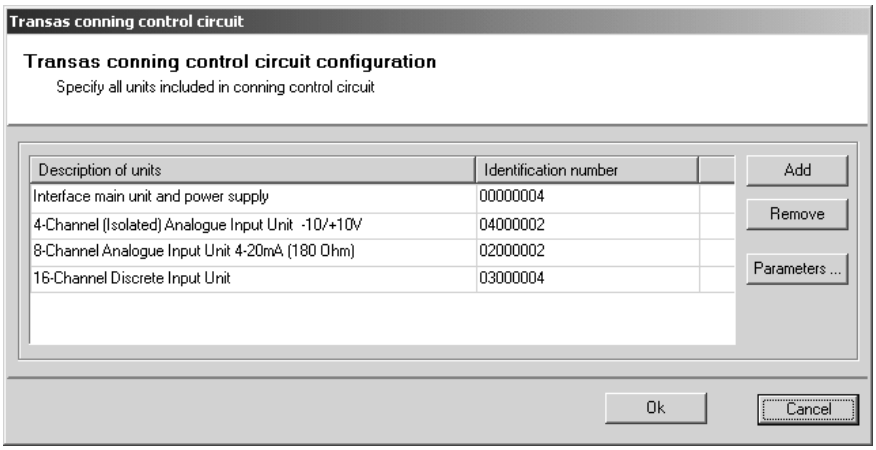
Press “OK” button to save the settings you have made.



Press “OK” button to exit from the Installation Wizard.



By using “Add” button in “Transas conning control circuit configuration” window, specify all the units, which Transas Conning Box consists of. Adjust parameters supplied by the installed units by using the procedure described above.

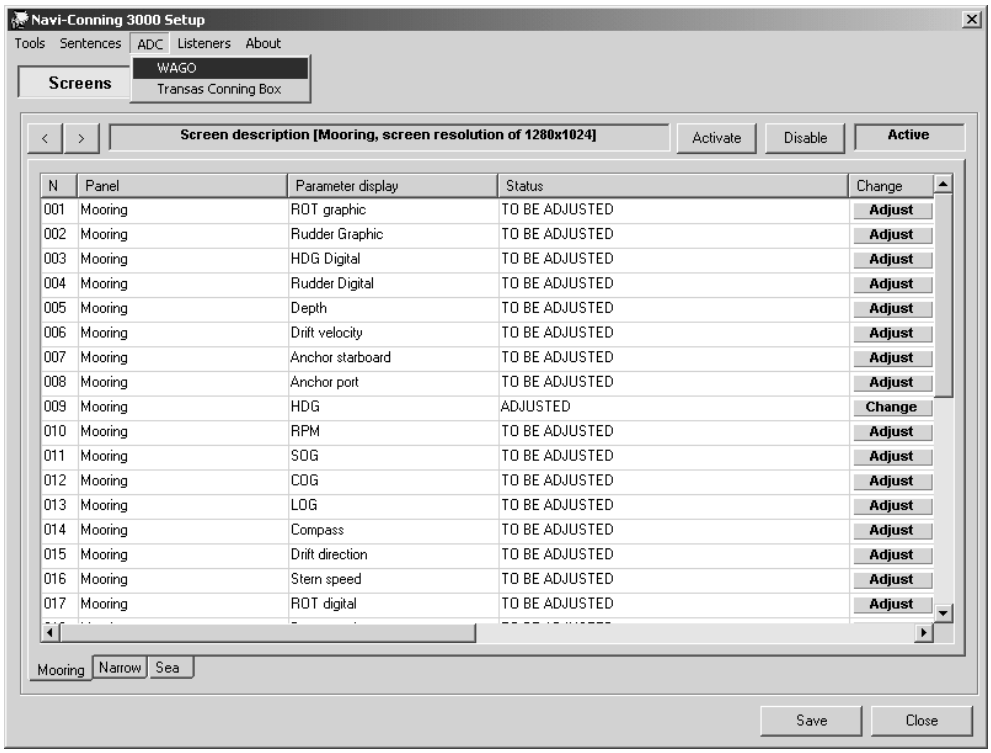


Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

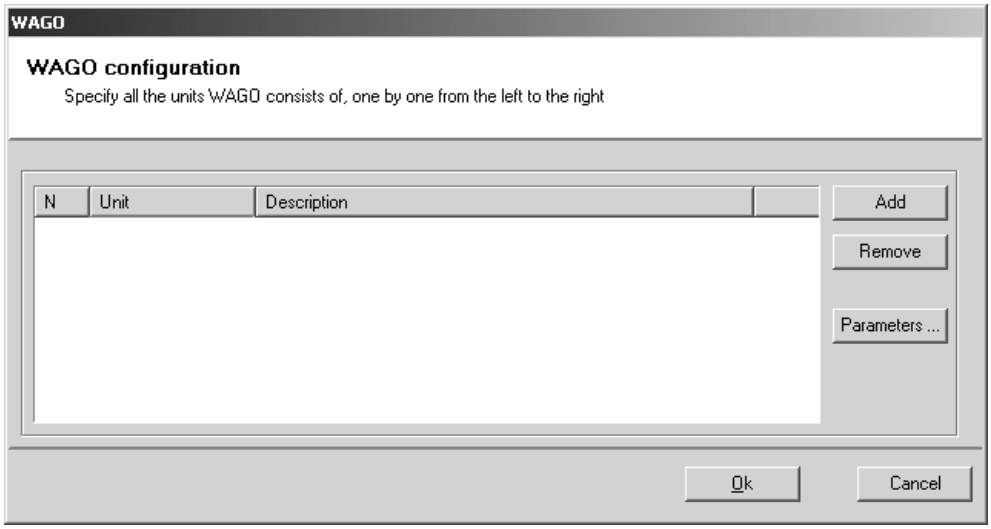
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

Adjustment of NC Operation with WAGO Conning Box

Open ADC menu of the Main menu.

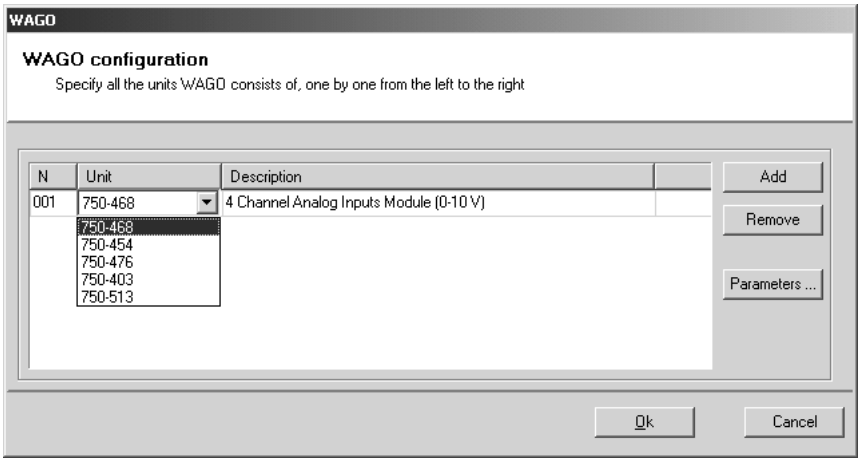

Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
WAGO
Transas Conning Box
Screens
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG ADJUSTED Change
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In ADC menu, which will open up, select WAGO option.



In “WAGO configuration” window, which will open up, press “Add” button.

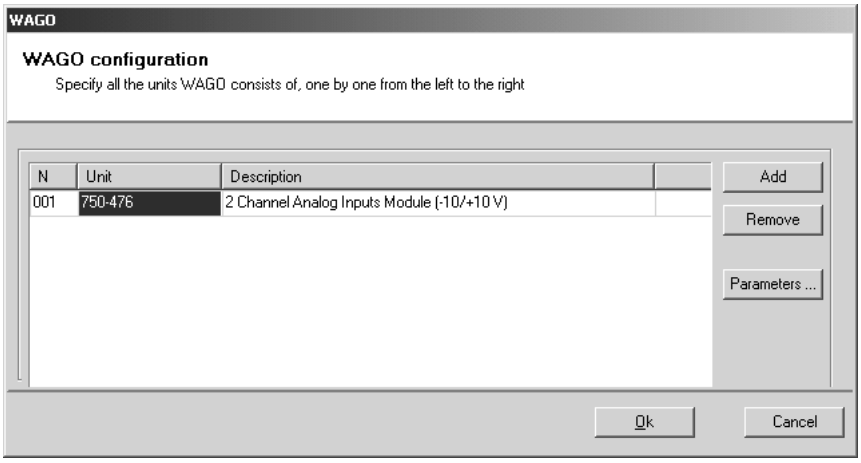
Position the cursor on a cell in “Unit” column of Conning Box device table and double click the left trackball/mouse button.



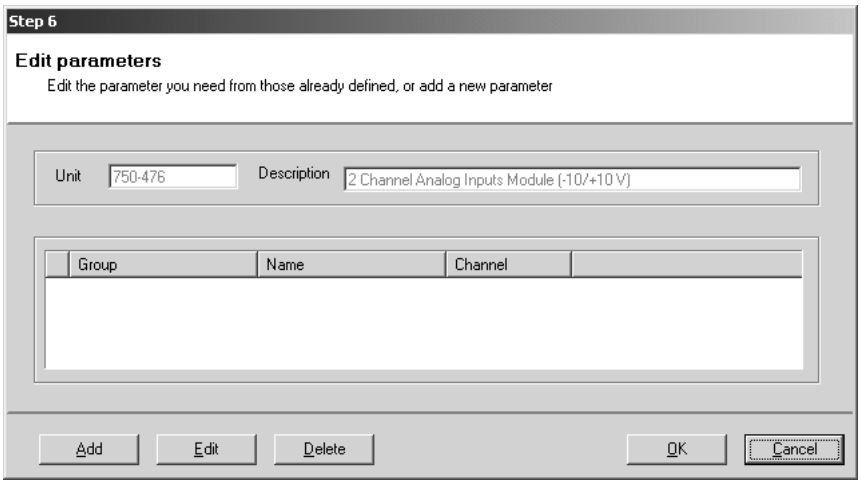
In the drop-down list, which will open up, select the device included in WAGO.

ATTENTION!

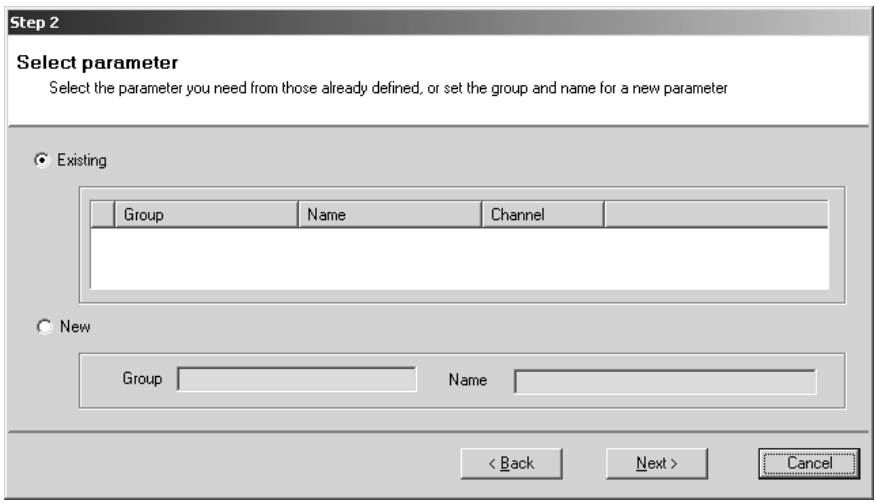
The first unit to be adjusted is the one, which is located next to 750-314 “Main Module” on the DIN rail.



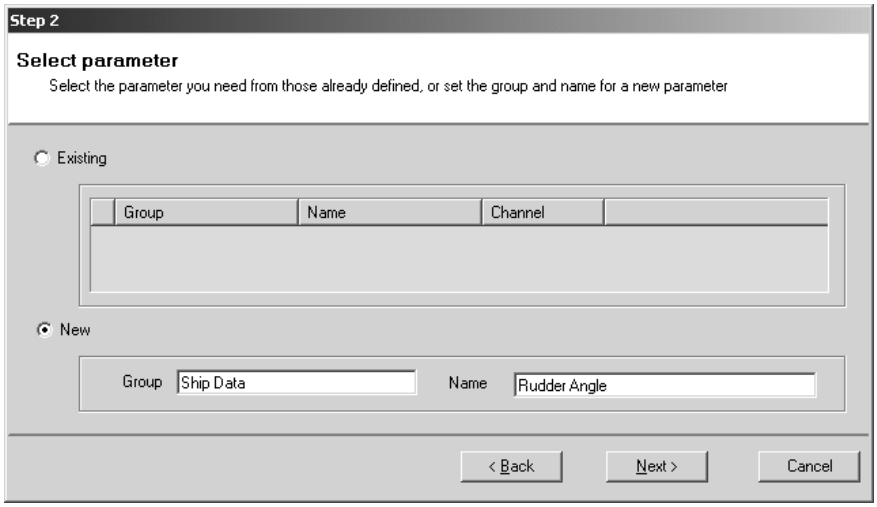
Press “Parameters” button to adjust parameters supplied by the installed unit.



In “Edit parameters” window, which will open up. Press “Add” button.

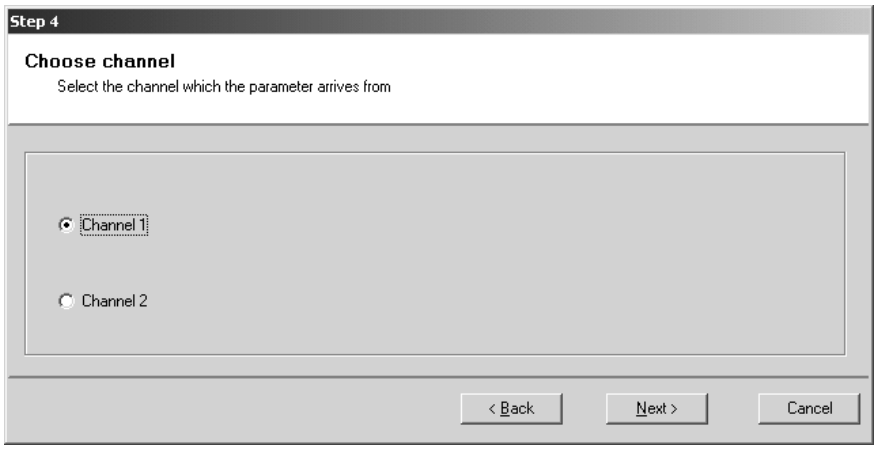


Select **New** option button. Use **Group** box to enter the name of the parameter group. Enter the parameter name in **Name** box.



Press “Next>” button.

Select the channel of the Conning Box unit, which the parameter is supplied by.



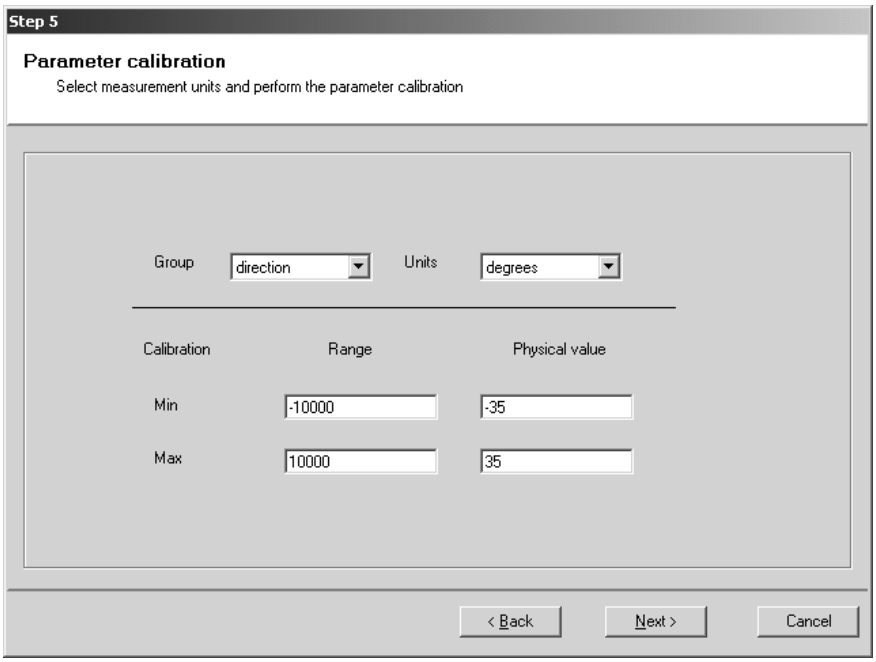
Press “Next>” button.

Select the parameter group and measurement units from the pertinent lists.
Use **Range** column to set the maximum and minimum value (of current, voltage, etc.), which is supplied to the ADC and corresponds to the maximum and minimum parameter value.

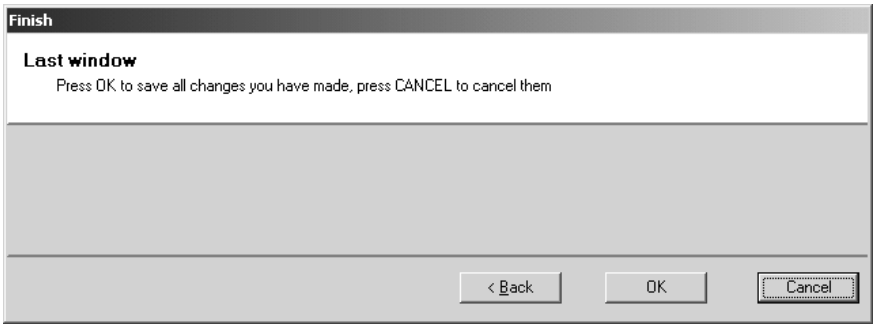
ATTENTION!

In **Range** column, the voltage value is required to be set in millivolts (10V are specified as 10000), whereas the current value should be specified in microamperes (for 4 mA 4000 is specified).

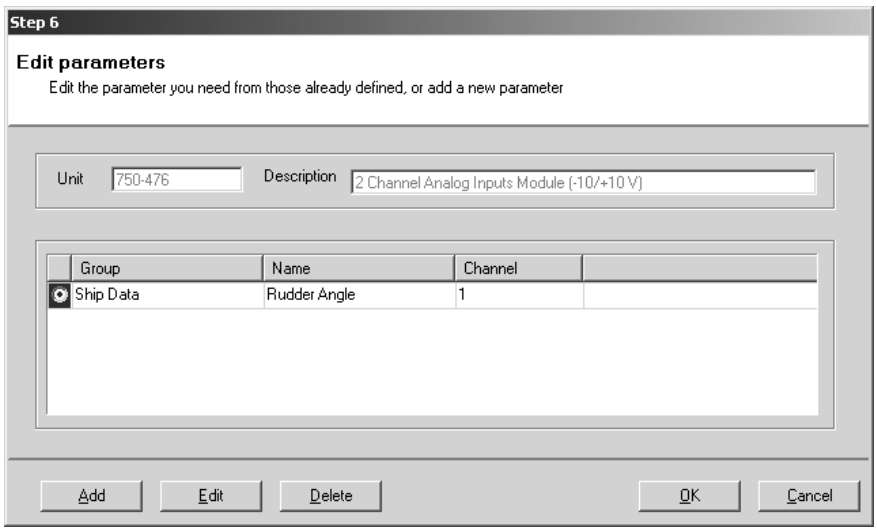
In **Physical value** column, set the minimum and maximum physical value of the associated parameter.



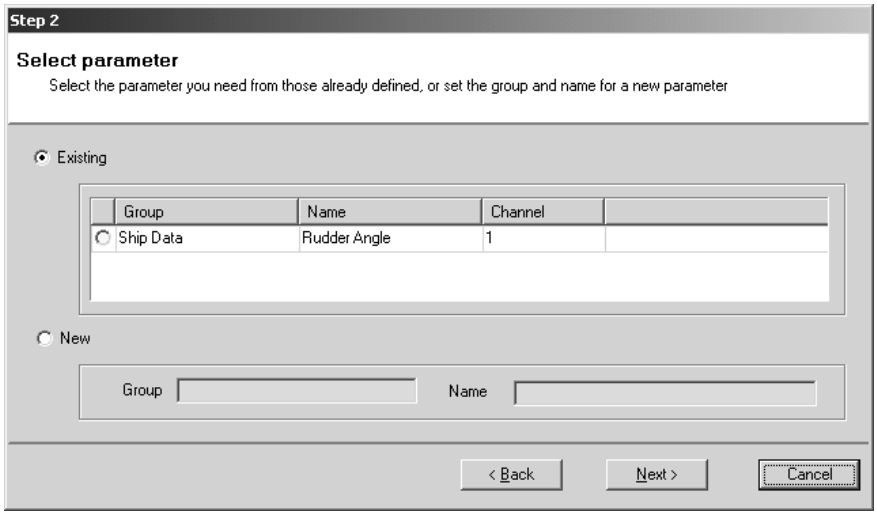
Press “Next>” button.



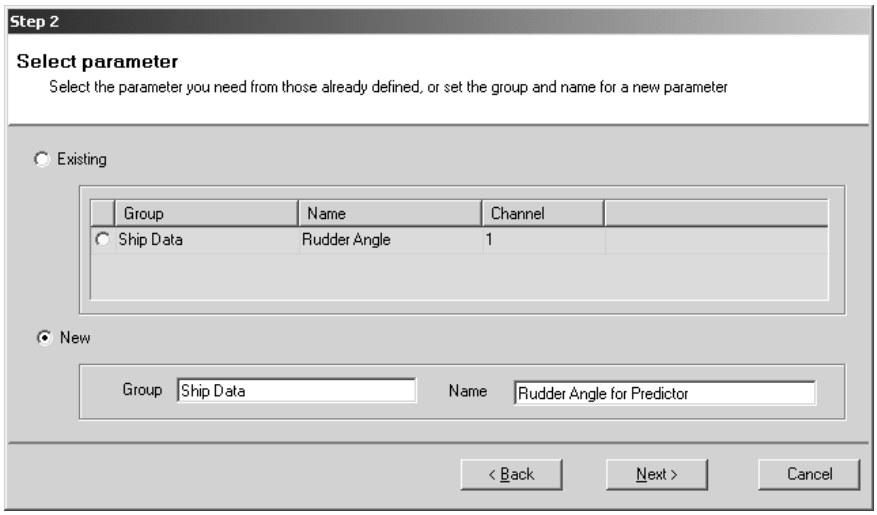
Press “OK” button to save the settings you have made.



Another parameter can be set for the same ADC channel, e.g. a parameter using other measurement units. To do this, press “Add” button in “Edit parameters” window again.

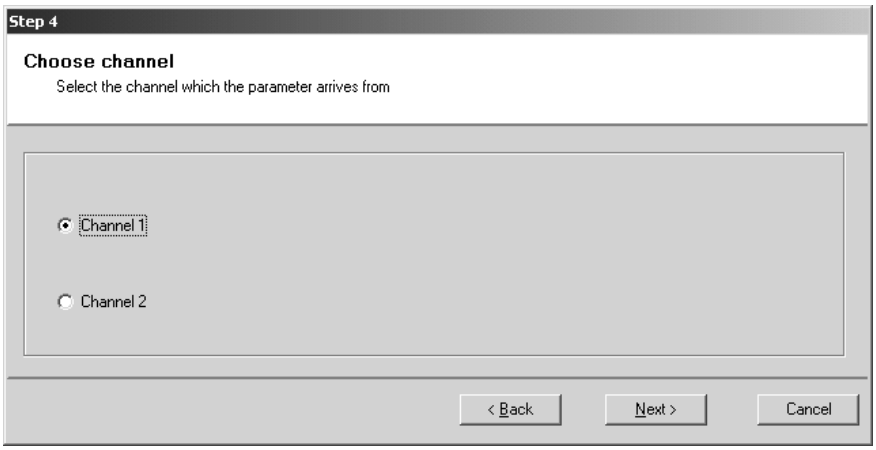


Select **New** option button. Use **Group** box to enter the name of the parameter group. Use **Name** box to enter the parameter name different from that entered before.



Press “Next>” button.

Select the same channel of the Conning Box unit, which the parameter is supplied by.



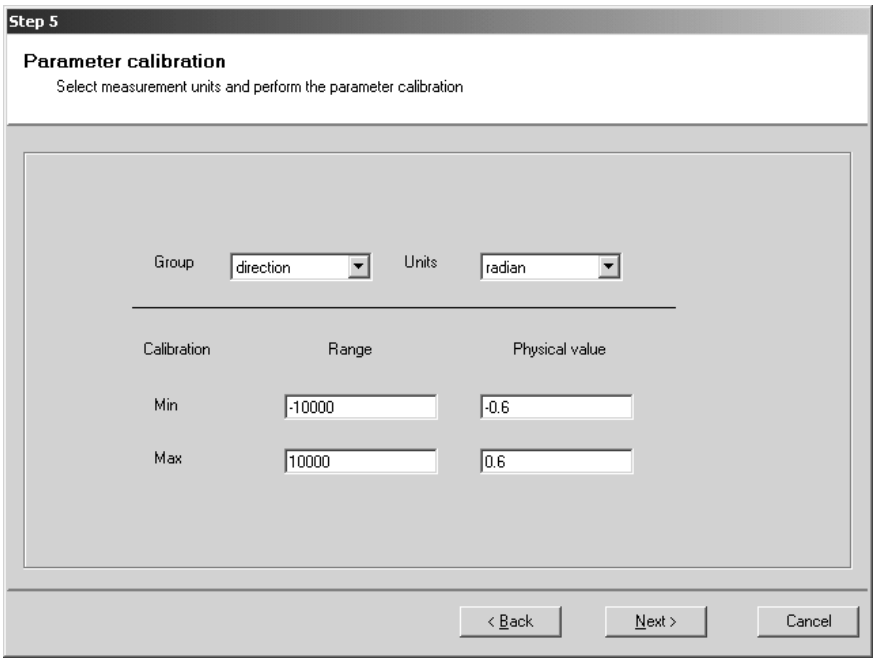
Press “Next>” button.

Select the parameter group and other measurement units from the pertinent lists. Use **Range** column to set the maximum and minimum value (of current, voltage, etc.), which is supplied to the ADC and corresponds to the maximum and minimum parameter value.

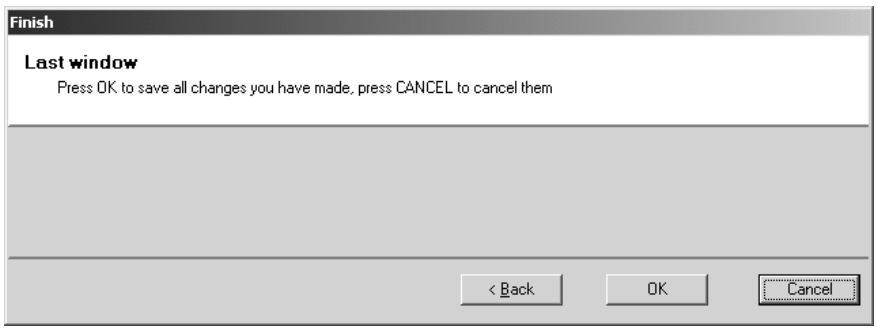
ATTENTION!

In **Range** column, the voltage value is required to be set in millivolts (10V are specified as 10000), whereas the current value should be specified in microamperes (for 4 mA 4000 is specified).

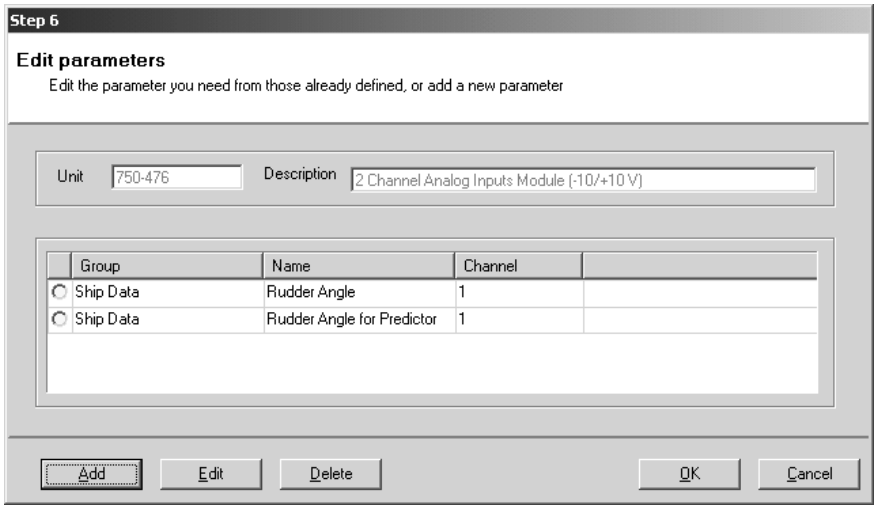
In **Physical value** column, set the minimum and maximum physical value of the associated parameter.



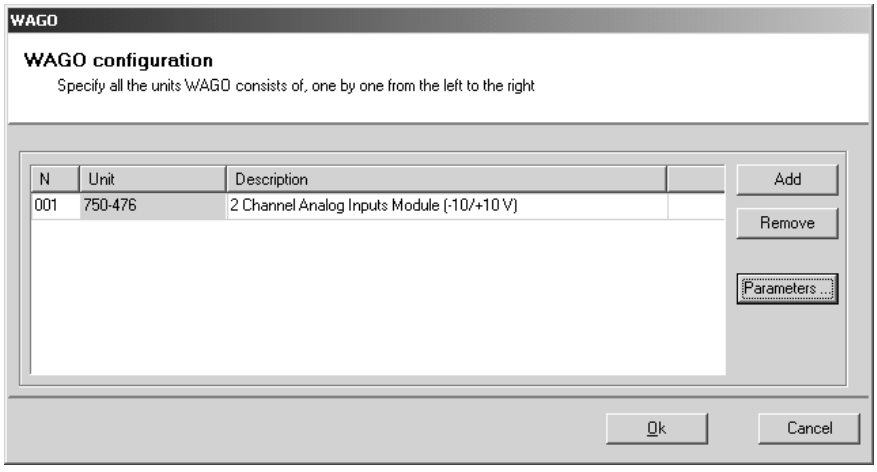
Press “Next>” button.



Press “OK” button to save the settings you have made.



Press “OK” button to exit from the Installation Wizard.

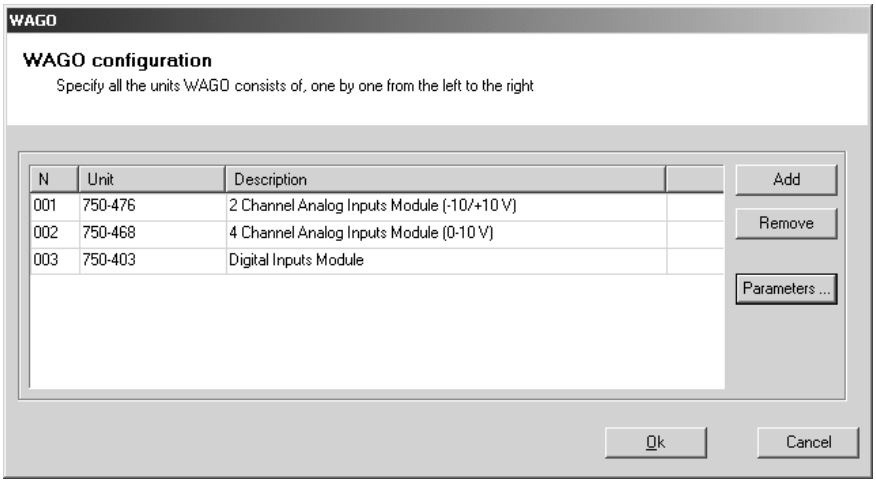


By using “Add” button in “WAGO configuration” window, specify all the units, which WAGO Conning Box consists of.

ATTENTION!

Adjustment of WAGO CB units should be performed in the order of their positions on the DIN rail from 750-314 “Main Module”.

Adjust the parameters supplied by the installed units by using the procedure described above.

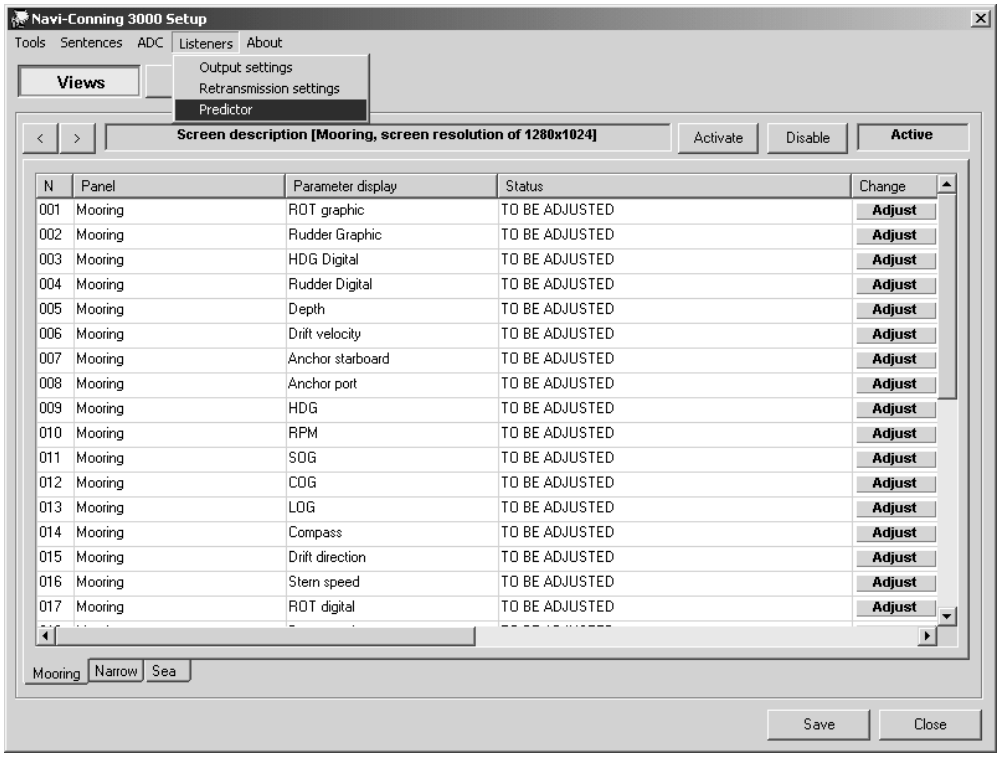


Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

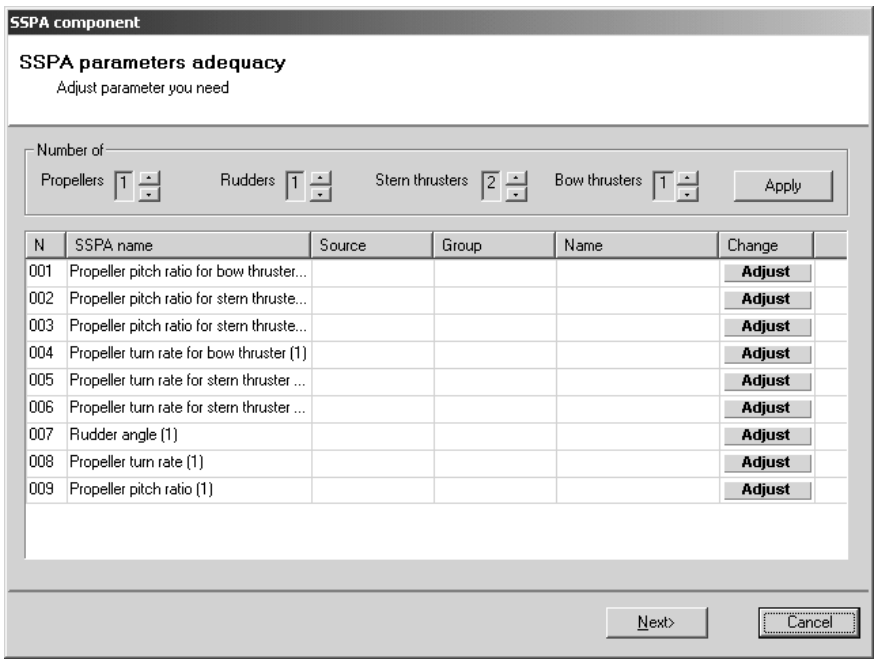
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

Predictor Adjustment

Open LISTENERS menu of the Main menu.


Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
Output settings
Retransmission settings
Predictor
Views
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In LISTENERS menu, which will open up, select PREDICTOR option.



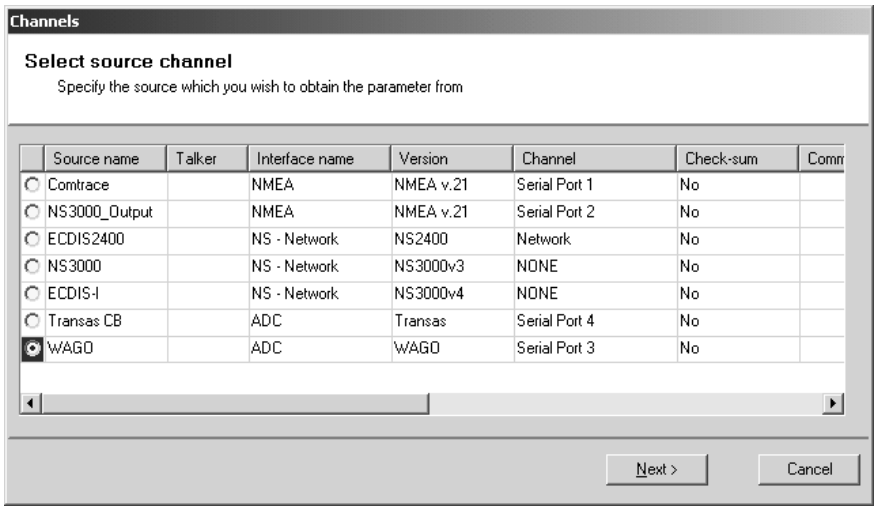
In **Number of** group, set the own ship parameters:

- Number of propellers;
- Number of rudders;
- Number of stern thrusters;
- Number of bow thrusters.

Press “Apply” button: the table of parameters will show the changes you have made.

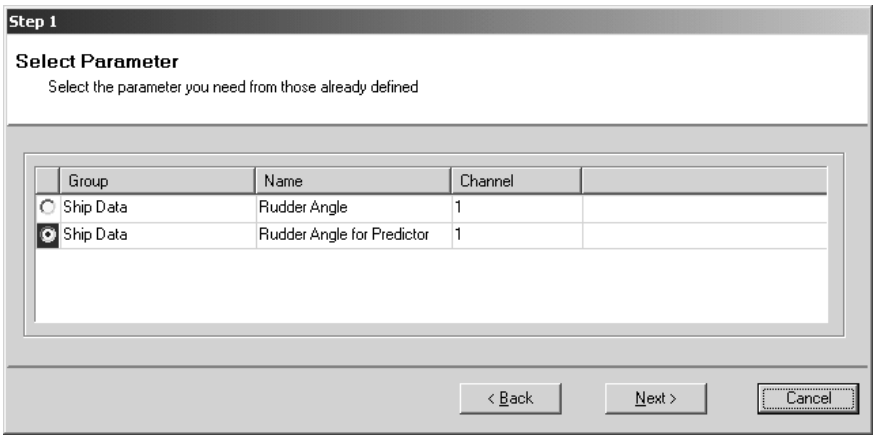
Press “Adjust” button in the line of the parameter to be adjusted.

Select the source of information, which the required parameter is supplied by.


Channels
Select source channel
Specify the source which you wish to obtain the parameter from
Source name
Talker
Interface name
Version
Channel
Check-sum
Comm
Comtrace NMEA NMEA v.21 Serial Port 1 No
NS3000_Output NMEA NMEA v.21 Serial Port 2 No
ECDIS2400 NS - Network NS2400 Network No
NS3000 NS - Network NS3000v3 NONE No
ECDIS-I NS - Network NS3000v4 NONE No
Transas CB ADC Transas Serial Port 4 No
WAGO ADC WAGO Serial Port 3 No
Next >
Cancel

Press “Next>” button.

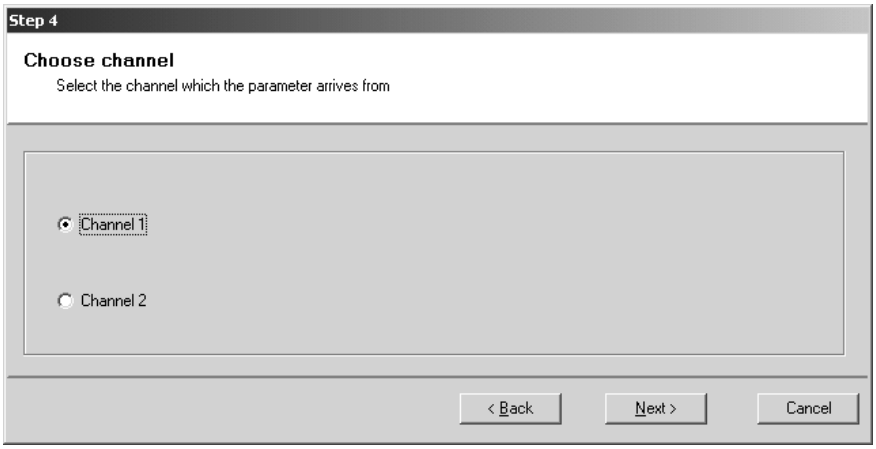
Use the list to select the parameter, which will be used for the Predictor operation.



Press “Next>” button.

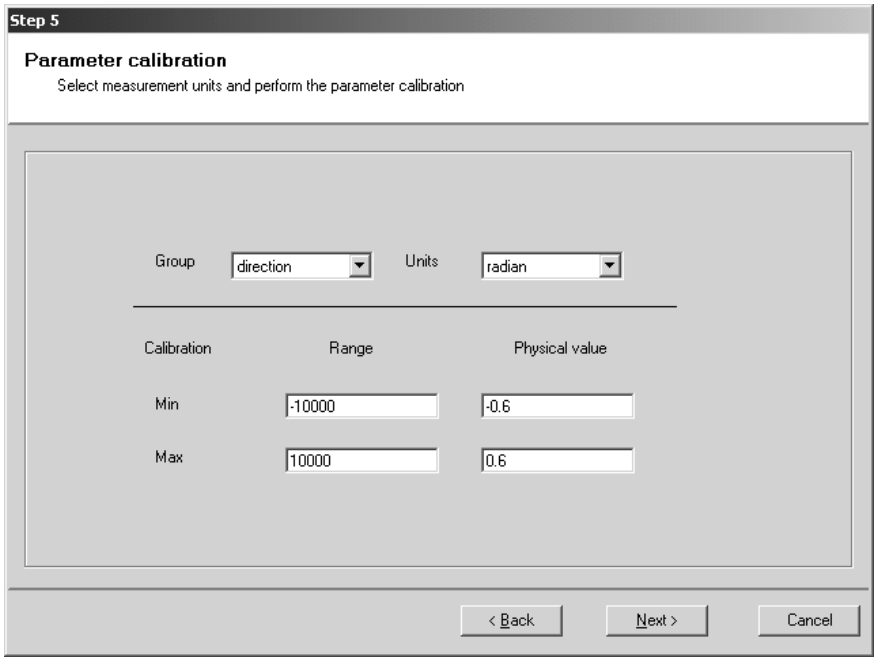
Select the channel of the ADC unit, which the parameter is supplied by.

Note: Several parameters with different names can be adjusted for one and the same ADC channel (see paragraphs **Adjustment of NC Operation Transas Conning Box** and **Adjustment of NC Operation with WAGO Conning Box**).



Press “Next>” button.

Select the parameter group and measurement units from the lists. Use **Range** column to set the maximum and minimum value (of current, voltage, etc.), which is supplied to the ADC and corresponds to the maximum and minimum parameter value. In **Physical value** column, set the minimum and maximum physical values of the associated parameter.

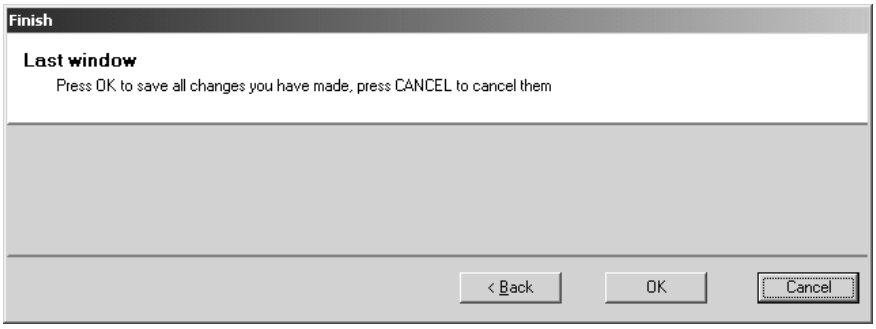


Use the following ranges and measurement units of parameters, which the predictor SSPA program recognises and processes:

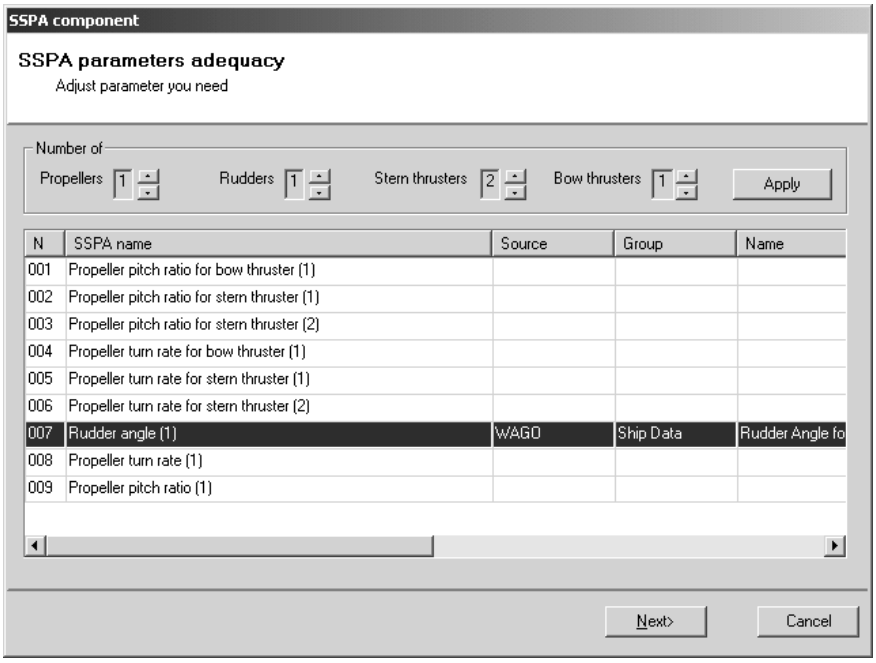
Parameter name	Dimension	Suggested range limits	Value	Note
Propeller pitch ratio for bow thruster*	fraction	-1.5; 1.5	-1	Bow thruster running max to port
			1	Bow thruster running max to starboard
Propeller pitch ratio for stern thruster*	fraction	-1.5; 1.5	-1	Stern thruster running max to port
			1	Stern thruster running max to starboard
Propeller turn rate for bow thruster*	rad/sec	N/A	N/A	Not applicable in current version of HdP
Propeller turn rate for stern thruster*	rad/sec	N/A	N/A	Not applicable in current version of HdP
Rudder angle	rad	-2π; 2 π	-0.005236	Port rudder angle (-0.3 deg)
			0.785398	St. rudder angle (45 deg)
Propeller turn rate	rad/sec	must be set for each individual ship	10.9956	105 RPM
			-11.1003	106 RPM in other side
Propeller pitch ratio	fraction	-1.5; 1.5	0.54	54 % of max ahead
			-0.23	23 % of max astern

Press “Next>” button.

* – the current SSPA Predictor version built into NS3000 does not process this parameter.

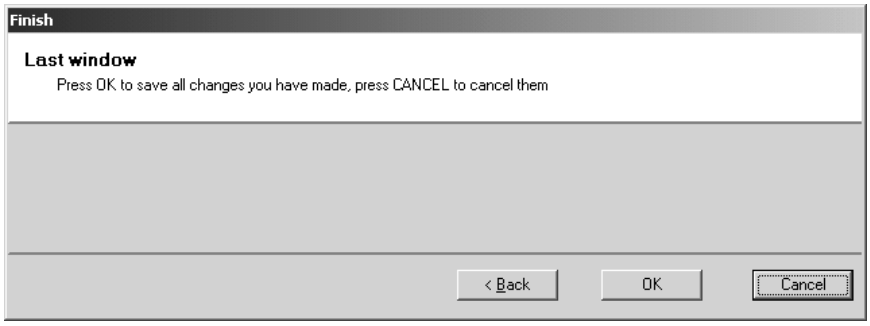


Press “OK” button to save the settings you have made.



Use “Adjust” buttons in the pertinent lines of the list to set the sources of information for the necessary parameters used for the Predictor operation.

Press “Next>” button.



Press “OK” button to save the settings you have made and exit to the Main window of “Navi-Conning 3000 Setup” utility.

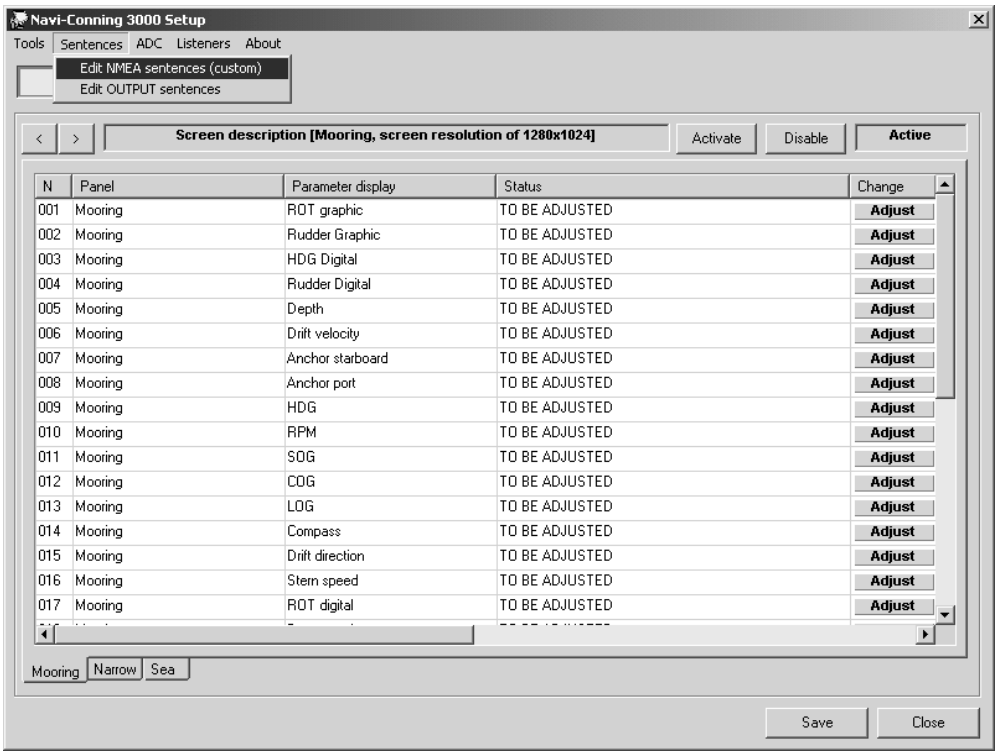
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

DESCRIPTION OF SENTENCE EDITOR

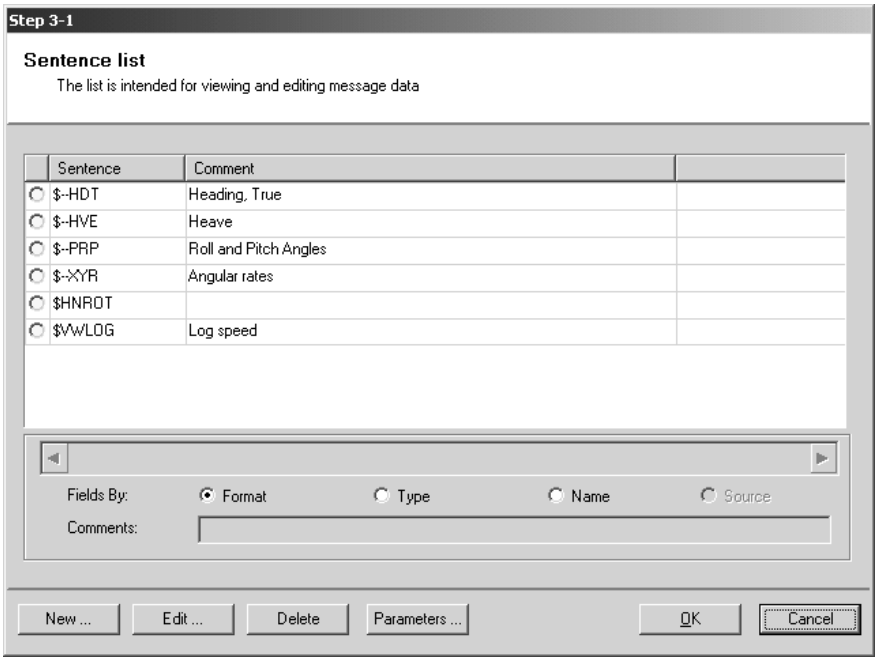
General

Sentence Structure

NMEA Sentence Editor is intended for creating and editing the database of user sentences supplied to the NC input (EDIT NMEA SENTENCES (CUSTOM)) and database of sentences passed to the output (EDIT OUTPUT SENTENCES).


Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
Edit NMEA sentences (custom)
Edit OUTPUT sentences
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

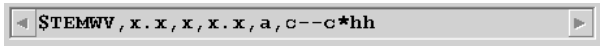
The Editor is opened from the Main menu of “Navi-Conning 3000 Setup” utility by selecting the SENTENCE option of the Main menu.



The Editor contains the database of sentences complying with NMEA/IEC standard, which are processed by the NC. The only way the user can add sentences to the database is by creating them anew (“New” button) or editing the already available sentences (“Edit” button).

In different “Editor” windows, the sentences can be viewed in the information line in the following form:

- “Format” – displays format of parameters contained in a sentence;

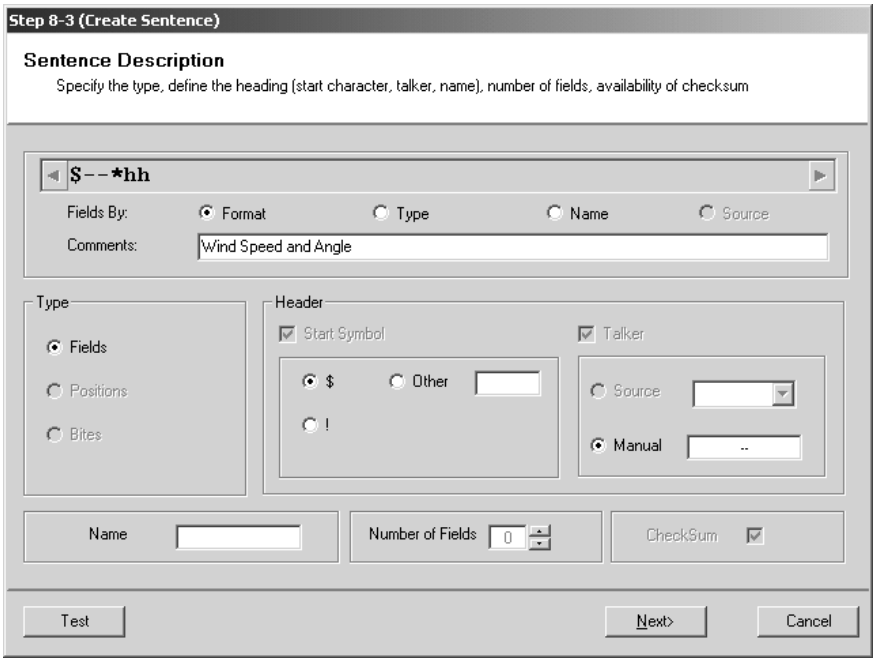


- “Type” – displays the number of parameters and their characteristics;

- “Name” – displays the names of parameters and their characteristics (not available in the current version).

When creating or editing sentences, the user specifies to the NC the rules which this sentence will be processed by.

The first step in the setting of parameter extraction rules is the determining of the structure of a sentence containing this parameter.



While creating the sentence structure, the user sets the criterion for checking the correctness of the sentence, which is being received. If at least one of the characteristics of a newly created sentence does not correspond to the characteristics of the sentence, which is being received, it will be ignored. The sentence has the following characteristics:

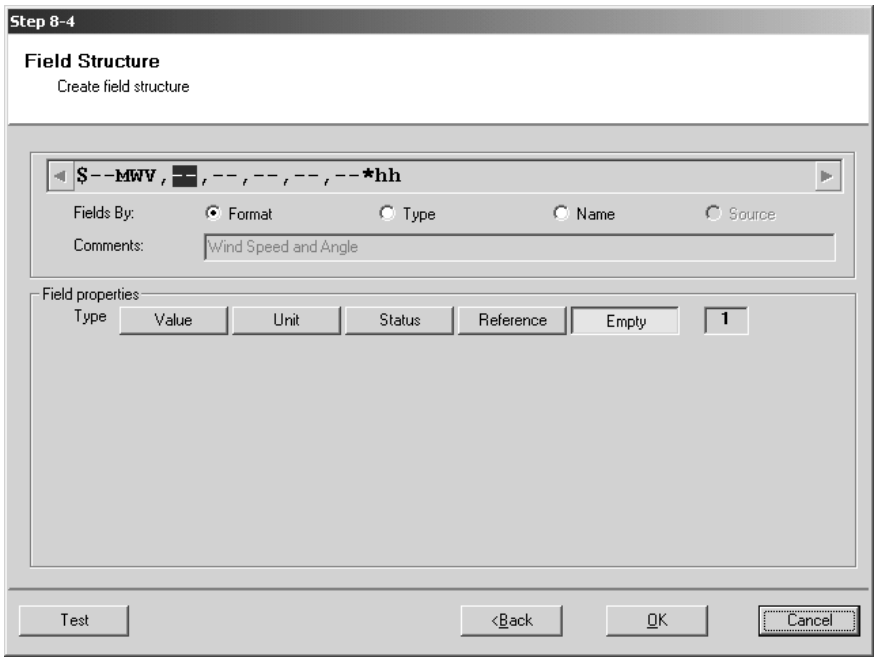
- “Type” – sentence classification by the field determining type.
  The NC features the following determining of the sentence fields:
  - “Fields” – fields are between “,” delimiters;
  - “Positions” – delimiters are not available, fields are fields of a fixed length which is set by the user (not available in the current version);
  - “Bites” – each sentence character is a separate field (not available in the current version).

- “Start Symbol” – sentence start symbol;
- “Talker” – information source identifier. If the identifier is specified (always two characters), only those sentences, which have the set identifier will be processed. The rest of the sentences, even if they have the same structure, will be ignored. If a default identifier is specified (“– –”), all the sentences which have this structure will be processed, regardless of the information source identifier;
- “Name” – sentence identifier (always three characters). If the identifiers of the sentence which is being receives and that which is being created do no match, they will be ignored;
- “Number of fields” – number of fields in the sentence. Where the number of fields in a received sentence does not correspond to the value set by the user, the sentence will be ignored;
- “Checksum” – always available.

The next step is to determine the structure of sentence fields.
Each field in a sentence can contain the following characteristics:

- “Value” – parameter value;
- “Unit” – parameter measurement units;
- “Status” – parameter status;
- “Reference” – parameter reference;
- Empty field.

These characteristics are determined by the user in the “Field Structure” window.

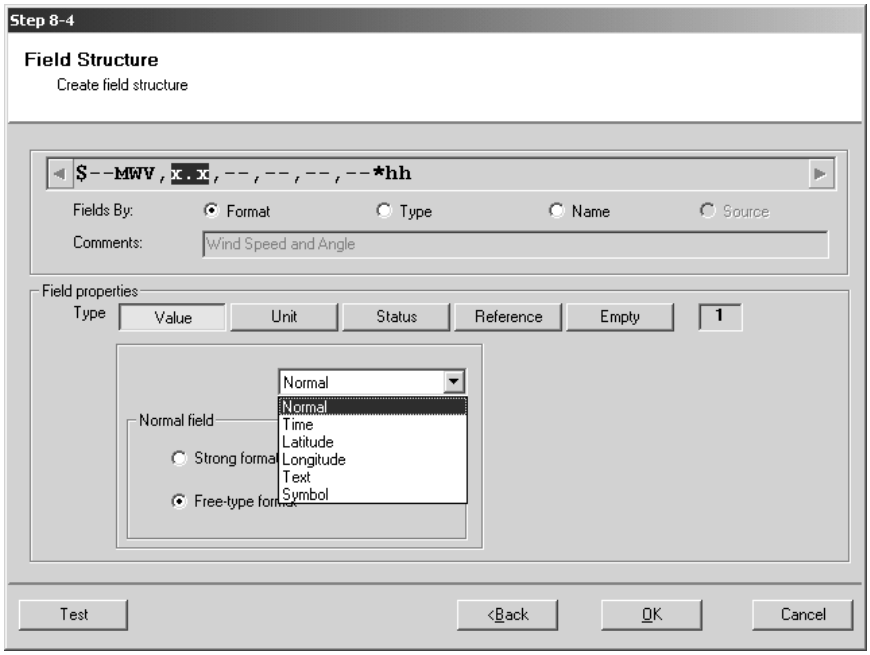


By default, fields in the sentence structure are empty,
which corresponds to the pressed “Empty” button.

To determine which parameter characteristics the selected field contains (value, measurement units, status or reference), position the cursor on the necessary field and press the appropriate button.

Parameter Value

Parameters may have digital and symbol values, which may be of constant or variable length; this is why it is necessary to determine the format of the field containing the parameter value. These settings are made at the fields' structure formation stage.



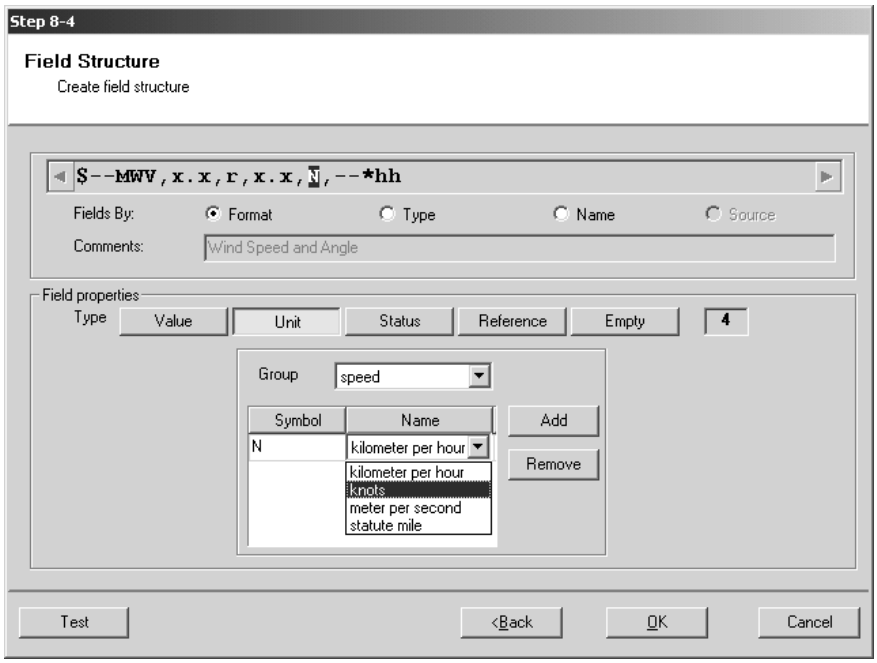
Field formats are provided in the table below:

Format type	Format	Notation in the sentence structure	Field description
Normal	Free Format	x.x	Fields of variable length containing integers or numbers with floating point
Normal	Strong Format	x	Fixed length field containing the number of digits as determined by the user
Customized	Latitude	llll.ll	Fixed/variable length field. Degrees/minutes.decimal – 2 fixed degree digits, 2 fixed minute digits and a variable number of digits in the decimal part of minutes. The starting zeroes are always included in degrees and minutes for observing the fixed length. Decimal digits may not be used
	Longitude	yyyyy.yy	Fixed/variable length field. Degrees/minutes.decimal – 3 fixed degree digits, 2 fixed minute digits and a variable number of digits in the decimal part of minutes. The starting zeroes are always included in degrees and minutes for observing the fixed length. Decimal digits may not be used
	Time	hhmmss.ss	Fixed/variable length field. Hours/minutes/seconds. decimal – 2 fixed hour digits, 2 fixed minute digits, 2 fixed second digits and a variable number of digits for the decimal part of seconds. The starting zeroes are always included in hours, minutes and seconds for observing the fixed length. Decimal digits may not be used
	Text	c– –c	Variable length field containing any permitted characters
	Symbol	a	Single character field containing characters characterising the parameters
		– –	Empty field

Parameter Measurement Units

The parameter may have the following types of measurement units:

- Measurement units may be absent (“None”);
- Variable measurement units (“Another field”) determined by the measurement unit identifier, which arrives in a separate field of the same sentence as the parameter itself. It is necessary to specify all the possible identifier values, which may arrive in this field. Appropriate measurement units will be selected according to this identifier. These settings are made at the field structure formation stage;



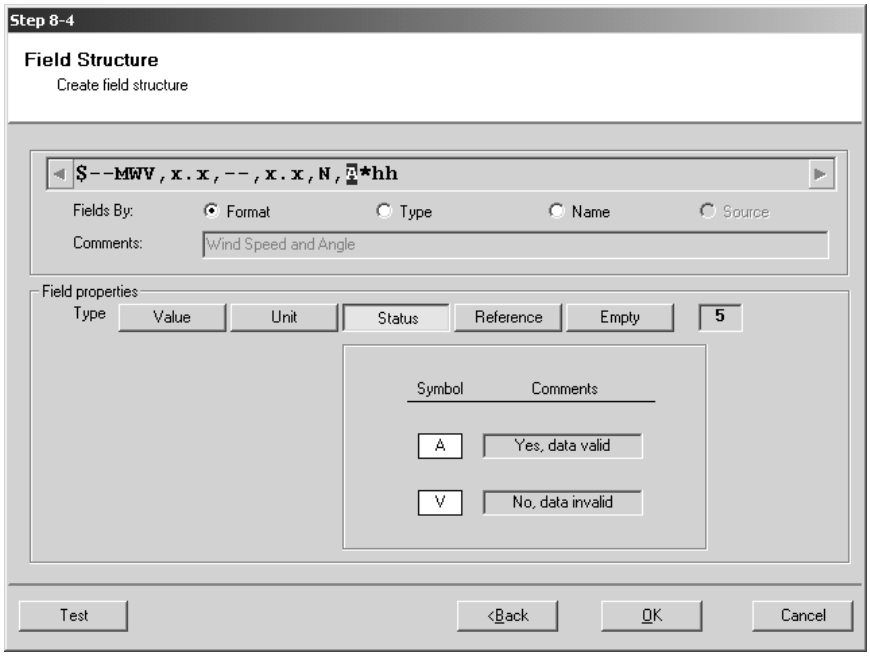
- Constant measurement units (“Inside field”) which are located within the field containing the parameter value. This parameter value is measured in the set measurement units only (see paragraph **Defining Parameter Retrieval Rules**).

Measurement units are set by the user in a special window, which is opened at the next step of the Installation Wizard after the value setup of the parameter, which has constant measurement units.

Factors for re-calculating all the measurement units to the system which the NC operates with, are specified separately in “Edit Units” window (see paragraph **Creating and Editing of Measurement Unit Database** of this chapter). The window is opened from the Main menu of “Navi-Conning Setup” utility: *Tools\Settings\Units*.

Parameter Status

The parameter may have a status, which determines its reliability.
The status always has two values: Valid/Invalid. Characters, which may arrive in “Status” field are determined by the user at the field structure formation stage.

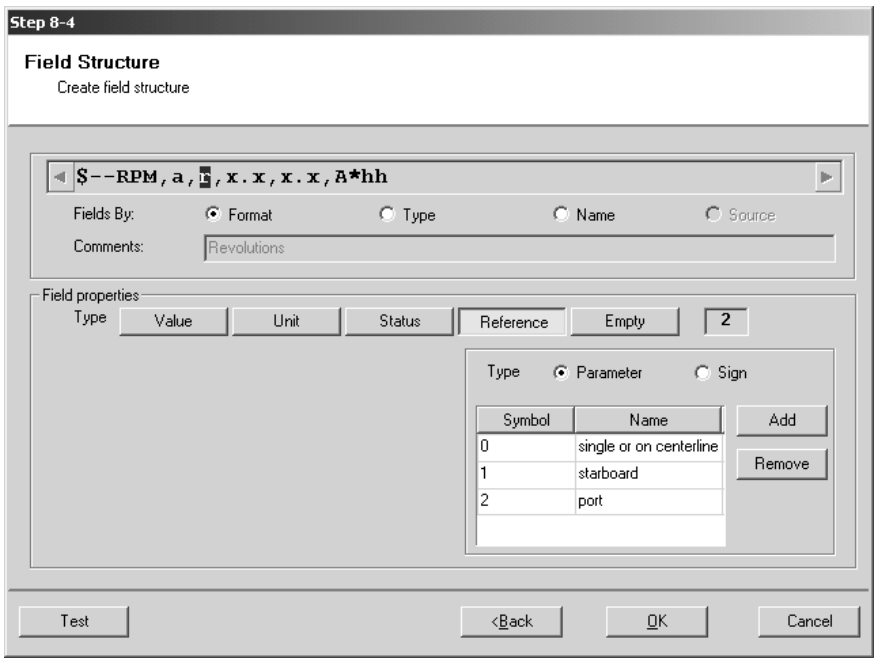


Status information is used for a group of alarms triggered off by the reception of unreliable data. Alarm generation setting for this group is made on “Alarms” window of “Navi-Conning Setup” utility (see paragraph **Adjustment of Alarm Generation**).

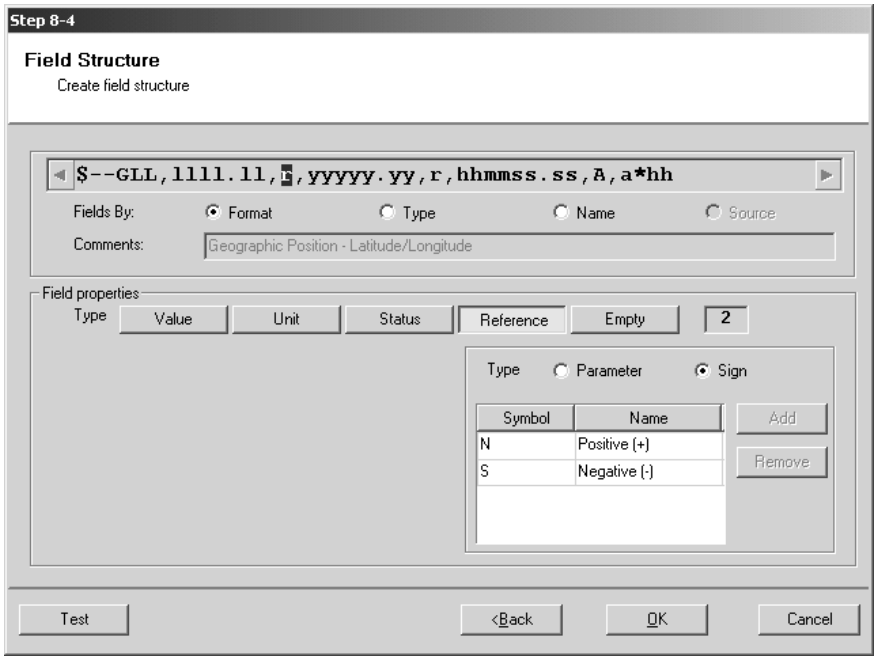
Parameter Reference

The parameter may have an additional characteristic: a reference, which may be of two types:

- Parameteric, which differs the parameter from other parameters, whose value arrives in the same sentence field. E.g. in RPM sentence, the reference indicates the engine, whose rpm are specified in the given sentence;



- Sign, which allows a positive or negative value to be assigned to the parameter, and then taken into account in the further processing. This reference always has two values only. E.g. it is used in GLL for the ship coordinates ("+" – North, "-" – South) or XTE to specify the direction ("+" – starboard, "-" – port).



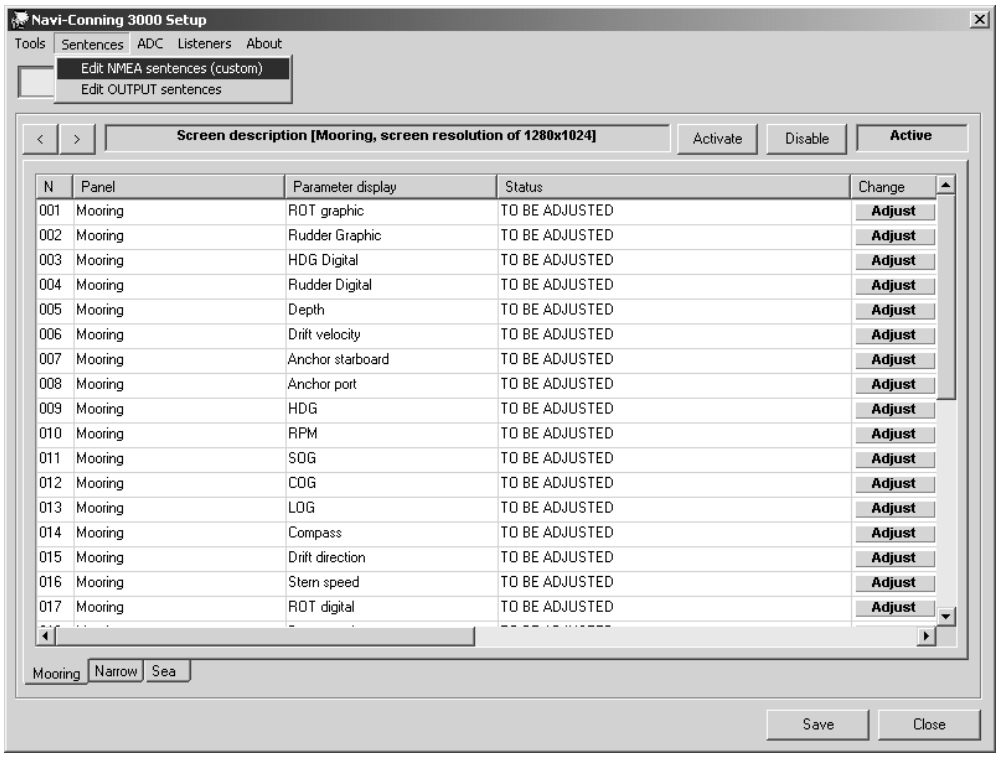
Characters, which may arrive in "Reference" field are determined by the user at the field structure formation stage.

Empty Fields

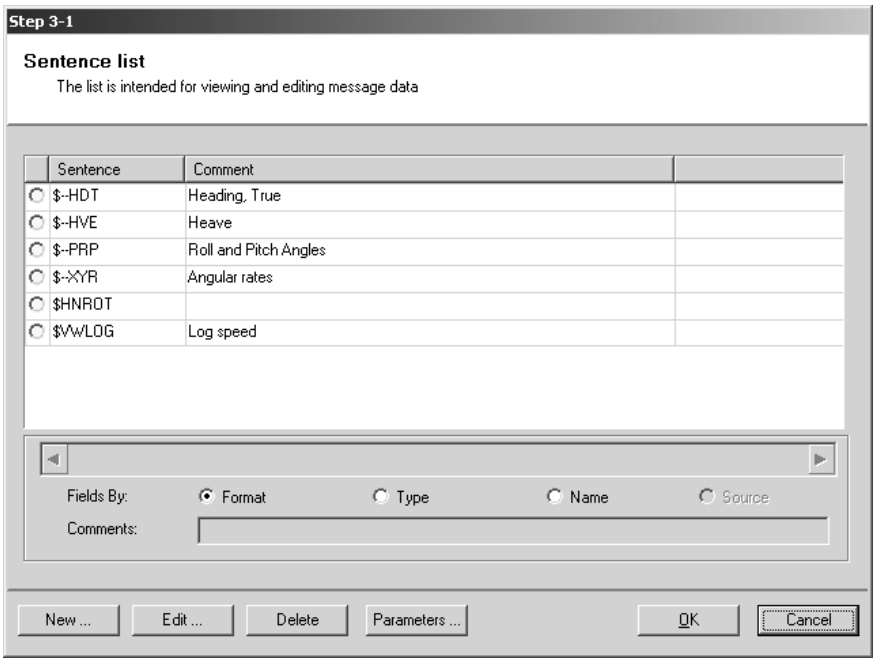
An empty field (“Empty” button is pressed) is not processed by “Navi-Conning 3000” program.

Creating of New Sentences Structure

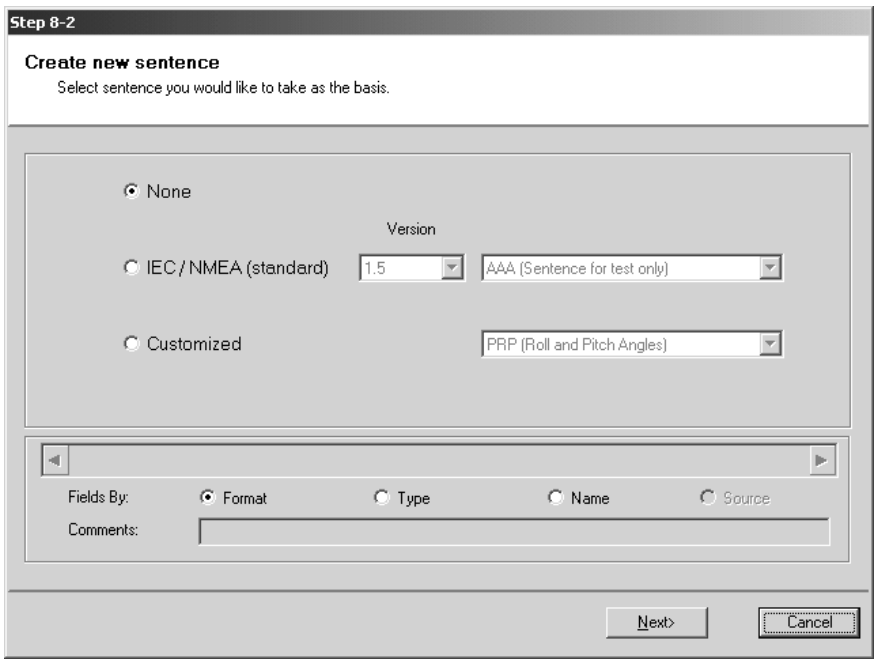
Open SENTENCES option of the utility’s Main menu.


Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
Edit NMEA sentences (custom)
Edit OUTPUT sentences
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In SENTENCES menu, select EDIT NMEA SENTENCES (CUSTOM) or EDIT OUTPUT SENTENCES option.



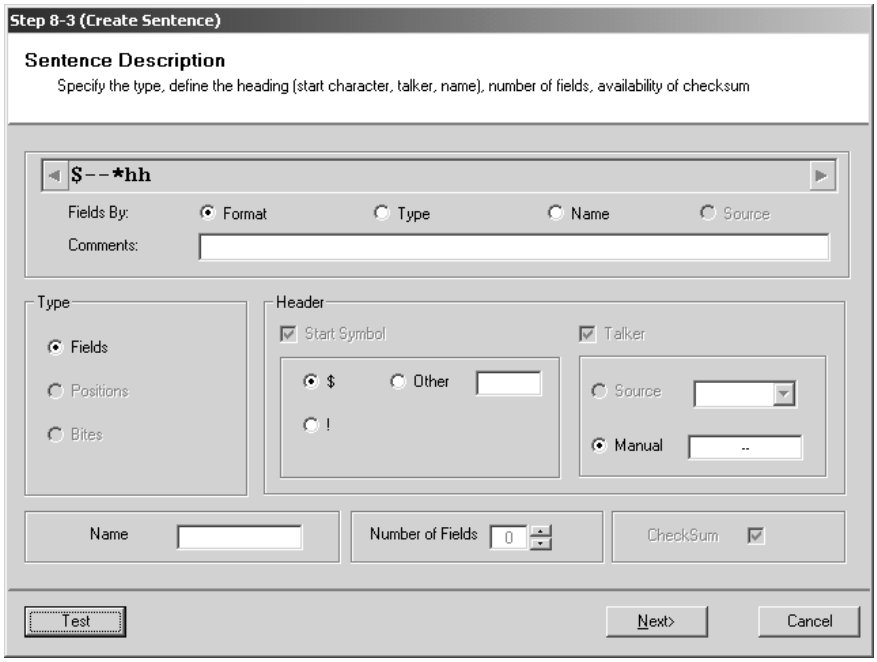
In “Sentences list” window, press “New” button.



In “Create new sentence” window, which will open up, select the appropriate checkbox depending on the type of the sentence, which is being created:

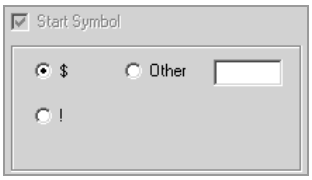
- **None** – to create a sentence anew;
- **IEC/NMEA (standard)** – the sentence is created on the basis of a standard NMEA sentence, which is copied from the relevant database together with parameters set in it. The NMEA standard version whose sentences are contained in the database, is selected from **Version** box;
- **Customized** – the sentence is created on the basis of sentences contained in the user database.

Press “Next>” button.

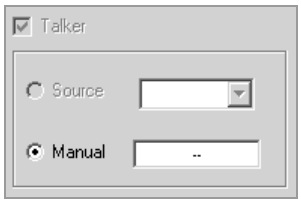


In “Sentence Description” window, which will open up, in **Start Symbol** group set the necessary start symbol by choosing the appropriate option button.

If **Other** is selected, enter the necessary symbol in the input box to the right.
E.g. for MWV sentence select “$”.



In **Talker** group set the identifier of the device, which the sentence is supplied by; to do this, enter it in block letters in **Manual** input box. The number of entered identifier characters should be two. E.g. for MWV sentence which is supplied by the wind sensor imitator, the identifier will be “TE”.



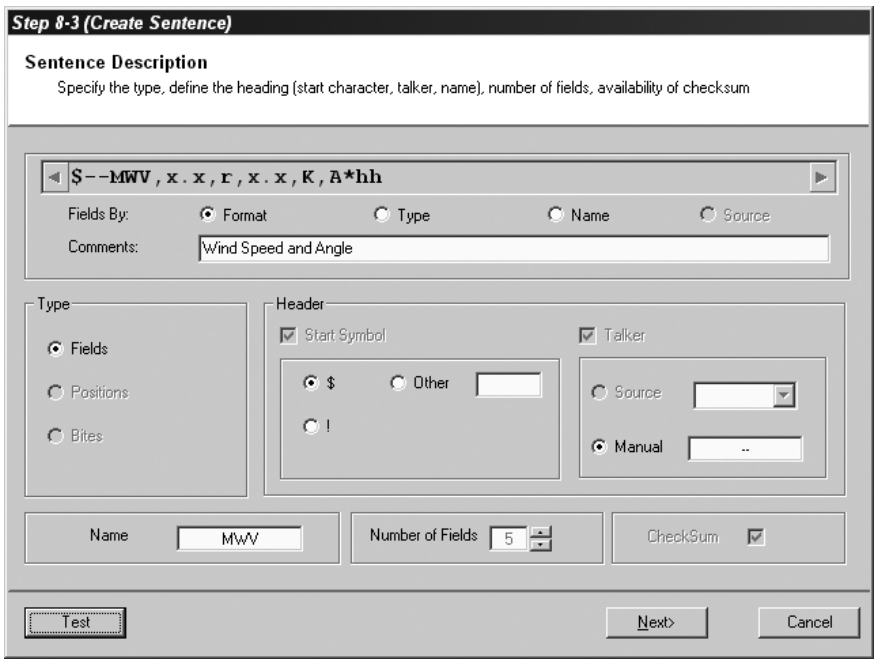
Use **Name** text box to enter the sentence identifier. The number of entered sentence identifier characters should be three.

Use **Number of Fields** text box to enter the number of fields in the sentence, which is being created. E.g. for MWV sentence it is 5.

Check Sum checkbox in the current version is checked by default, i.e. all the created sentences will have a checksum.

Use **Comments** input box to enter the full name of the sentence or comments on it, e.g. “Wind Speed and Angle” for MWV sentence.

The formed sentence structure will be displayed in the information line in the top part of “Sentence Description” window.

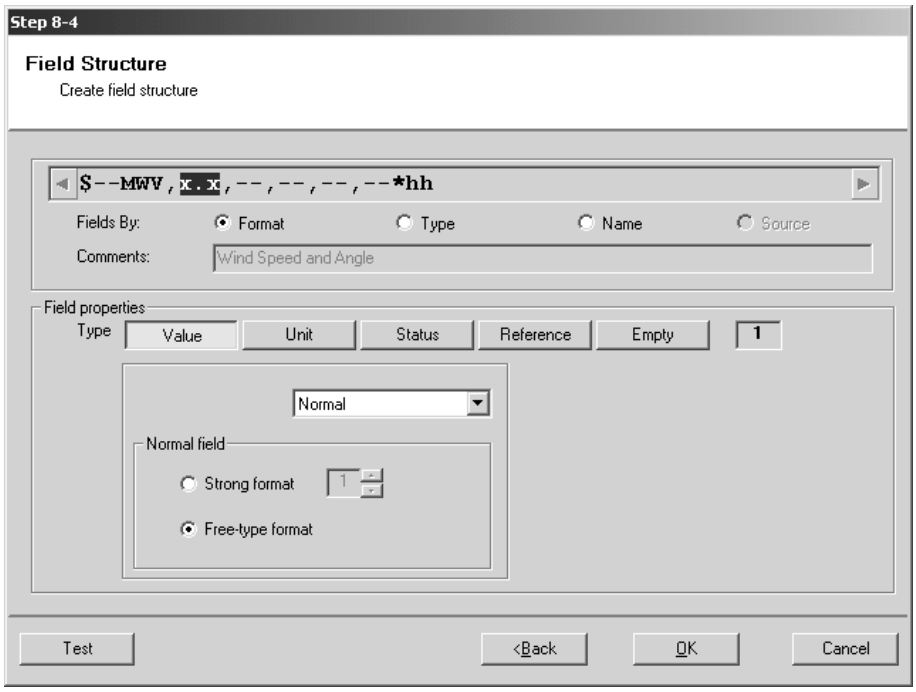


ATTENTION!

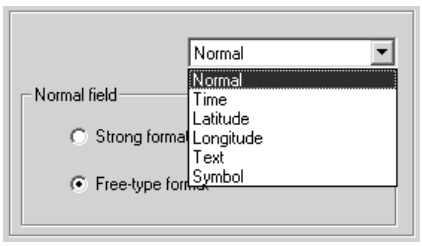
At the time when the sentence editor is used, serial ports can be monitored. Press “Test” button to open “Port Monitoring” window (see paragraph **Setup of Serial Ports**).

Press “Next>” button.

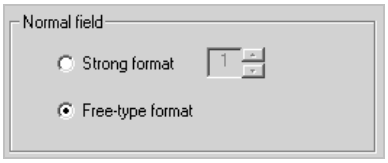
Specify the fields, which will contain parameter characteristics. E.g. for MWV sentence position the cursor on the first field containing the parameter value and press “Value” button.



Specify the format type for the field describing the parameter value. To do this, select the required value from the drop-down list. E.g. “Normal” for the given value of a MWV sentence parameter.

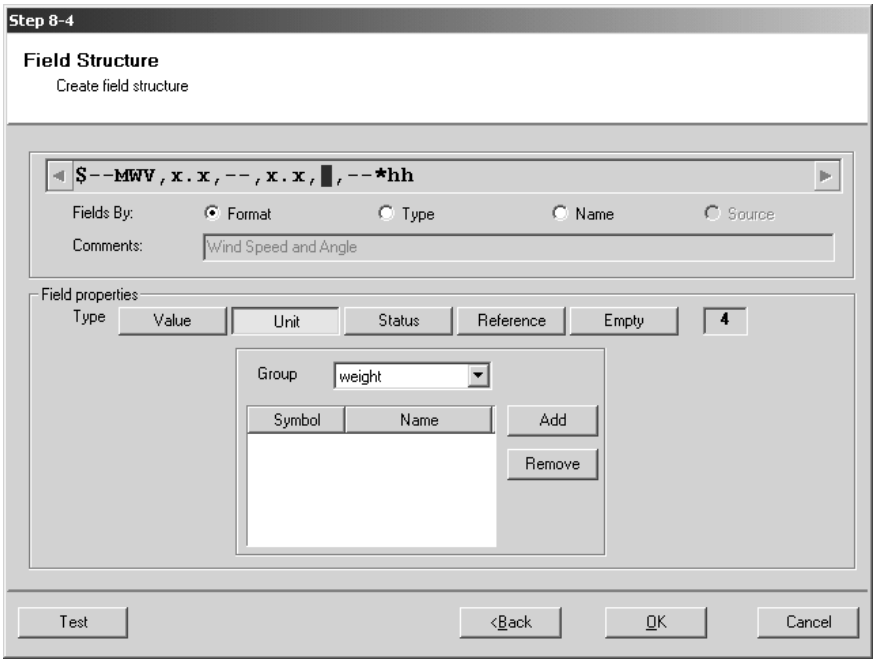


For “Normal” field type set the format by selecting the appropriate option button in **Normal Field** group. E.g. for “Wind Angle” parameter of MWV sentence, set **Free-Type Format**. This will be a variable length field containing integers or numbers with floating point. If **Strong Format** is set, the field will have a fixed value and contain numbers with a set number of digits.

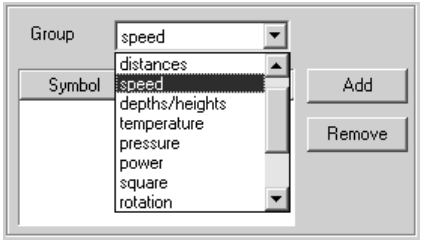


Use a similar procedure to specify fields containing values of other parameters, e.g. the third field for MWV sentence.

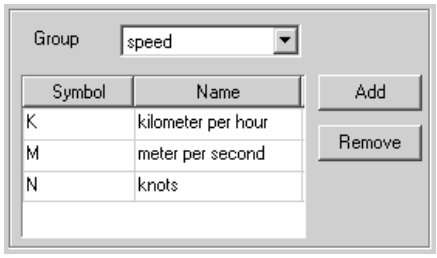
Position the cursor on the field containing the parameter measurement units (e.g. variable wind speed measurement units in MWV sentence) and press “Unit” button.



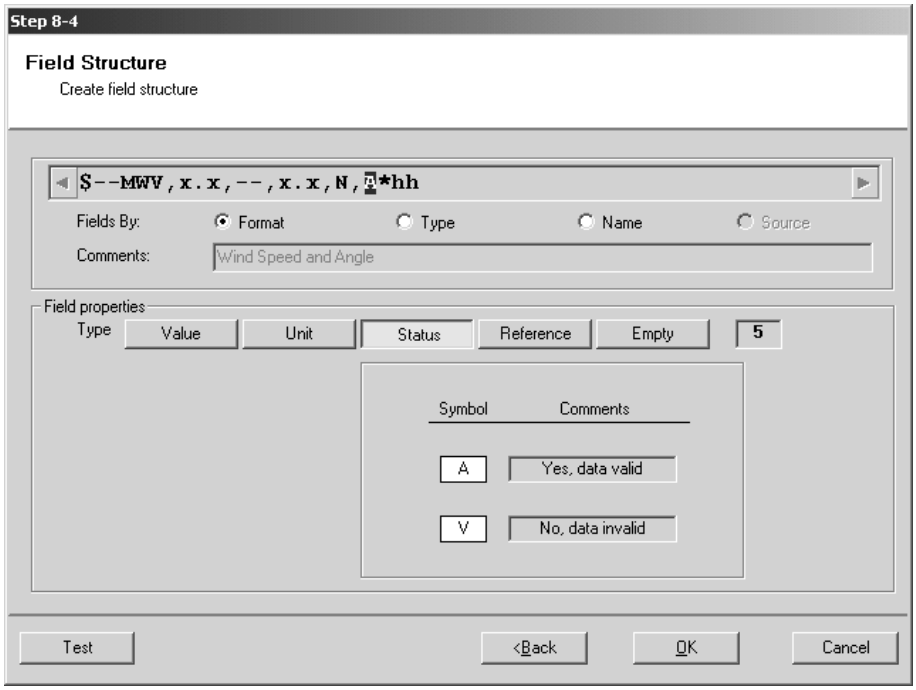
Select the name of the measurement unit group in **Group** window. Groups and measurement units they include are set in advance in *Tools\Settings\Units of meas*. menu (see paragraph **Creating and Editing of Measurement Unit Database** of this chapter).



Press “Add” button. Position the cursor on a cell in “Symbol” column and double click the left trackball/mouse button. Enter the measurement unit symbol and press <Enter>. In “Name” column, select the measurement units corresponding to the unit symbol (see paragraph **Parameter Measurement Units**) and press <Enter>. Use “Add” button to enter all the possible measurement units for the given parameter.

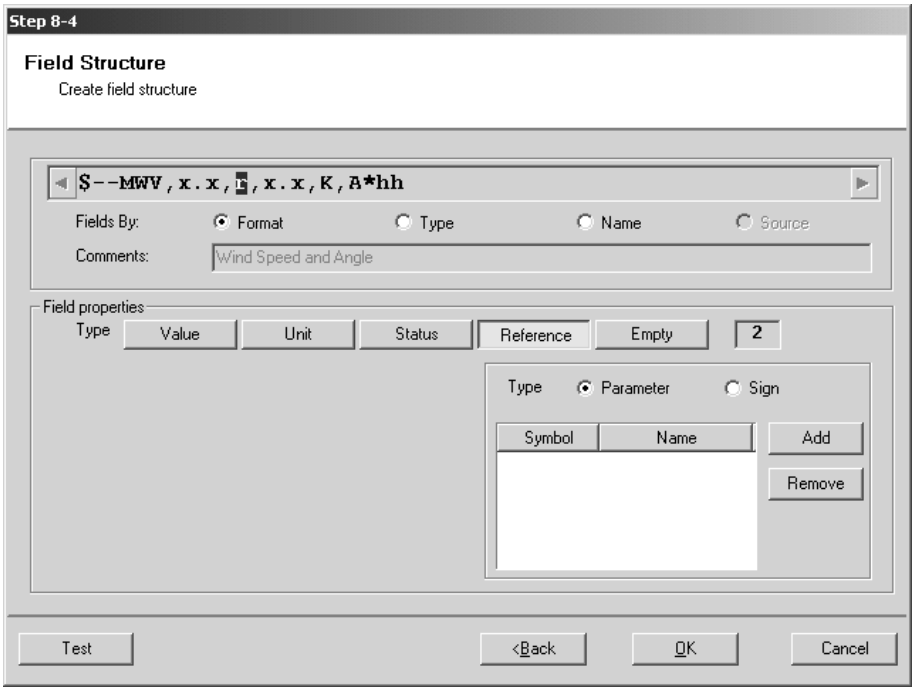


Position the cursor on the field containing the parameter status and press “Status” button.



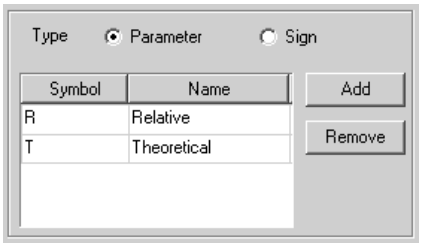
Set the symbols corresponding to reliable and unreliable data in “Symbol” column. As the set symbols are received, the edited parameter will be assessed by the NC as valid or invalid. If unreliable data is received, an alarm is triggered off. The alarm generation setting is made on “Alarms” window (see **Chapter 2** paragraph **Adjustment of Alarm Generation**).

Position the cursor on the field containing the parameter reference (e.g. the second field in MWV sentence) and press “Reference” button.



In **Type** line, select the reference type (for MWV sentence – **Parameter**).

Press ”Add” button. Position the cursor on “Symbol” column cell and double click the left trackball/mouse button. Enter the reference symbol and press <Enter> key.
Enter the reference name in “Name” column and press <Enter> key. Use “Add” button to enter all the symbols of the reference, which may arrive in the sentence in question.



Formation of the sentence structure is completed.

Note: In “Field Structure” window, you can change the order of sentence fields and edit their structure by using “Value”, “Unit”, “Status” or “Reference” buttons. You may leave the field empty as required by using “Empty” button.

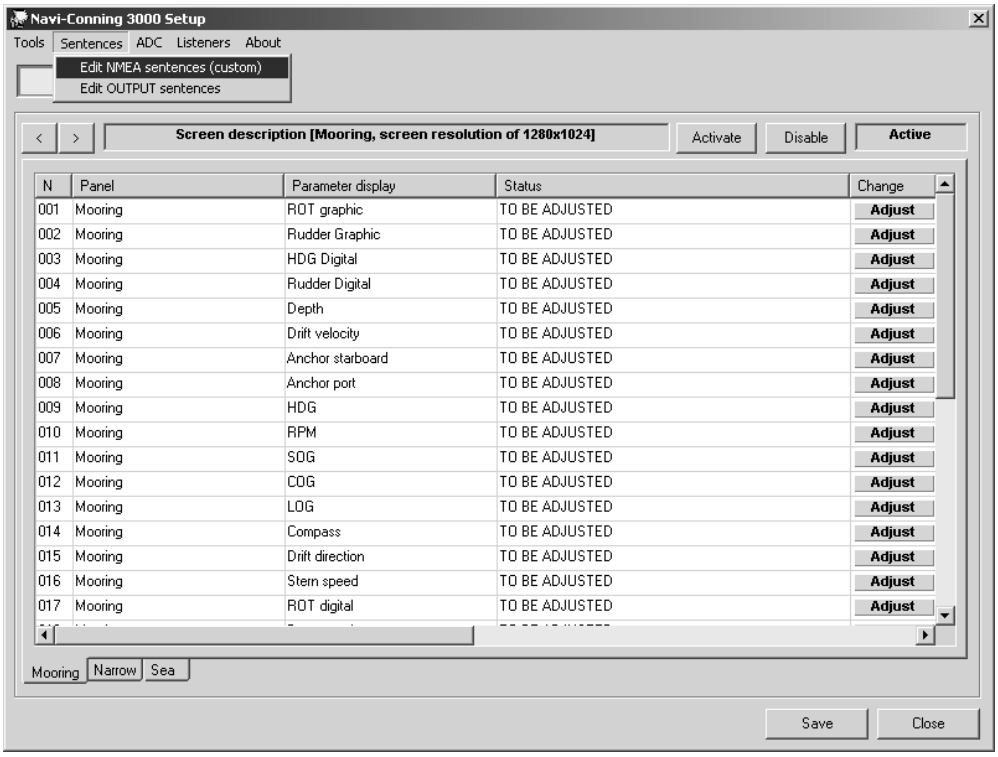
Press “OK” button.

In “Sentences List” window, which will open up, the entered sentence will be added in the bottom part of sentence table.

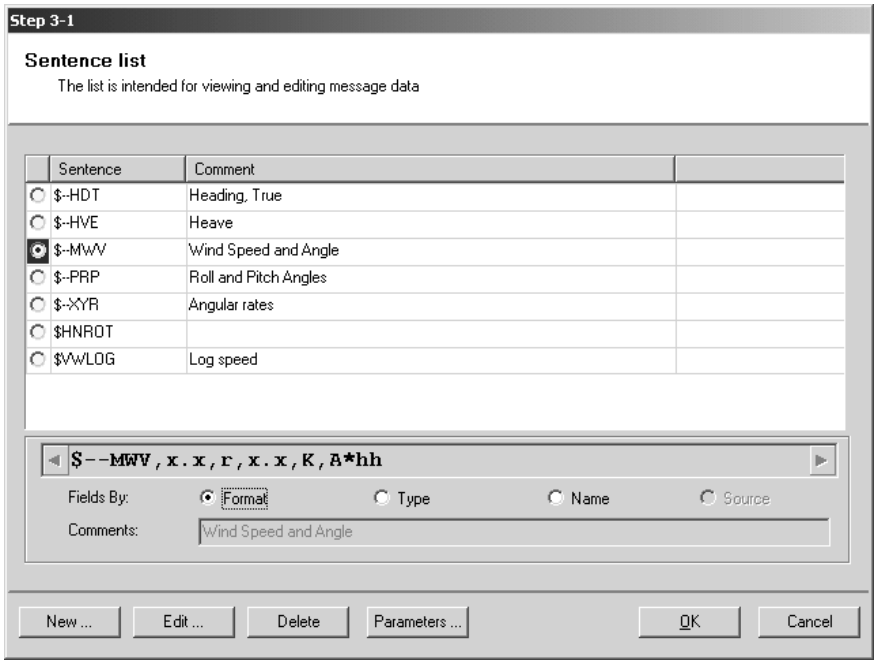
It is then necessary to set rules for the extraction of parameters from the sentence which you are editing.

Defining Parameter Retrieval Rules

To define rules for retrieving parameters from the sentence, open SENTENCES menu of the utility's Main menu.


Navi-Conning 3000 Setup
Tools
Sentences
ADC
Listeners
About
Edit NMEA sentences (custom)
Edit OUTPUT sentences
Screen description [Mooring, screen resolution of 1280x1024]
Activate
Disable
Active
N
Panel
Parameter display
Status
Change
001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
004 Mooring Rudder Digital TO BE ADJUSTED Adjust
005 Mooring Depth TO BE ADJUSTED Adjust
006 Mooring Drift velocity TO BE ADJUSTED Adjust
007 Mooring Anchor starboard TO BE ADJUSTED Adjust
008 Mooring Anchor port TO BE ADJUSTED Adjust
009 Mooring HDG TO BE ADJUSTED Adjust
010 Mooring RPM TO BE ADJUSTED Adjust
011 Mooring SOG TO BE ADJUSTED Adjust
012 Mooring COG TO BE ADJUSTED Adjust
013 Mooring LOG TO BE ADJUSTED Adjust
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

In SENTENCES menu, select EDIT NMEA SENTENCES (CUSTOM) or EDIT OUTPUT SENTENCES option. Select the necessary sentence from the database.

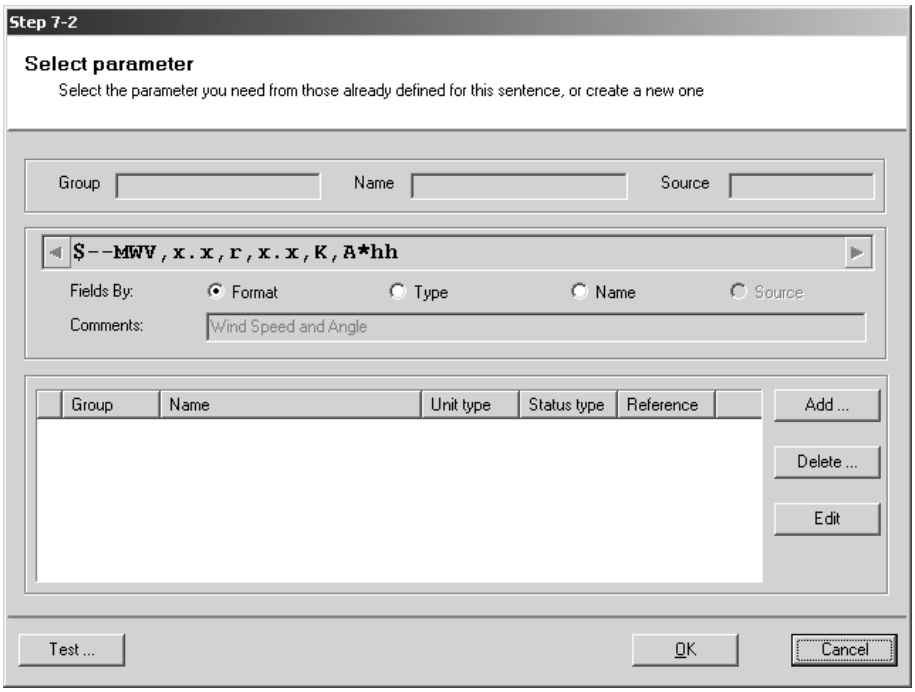


Addition of New Parameters

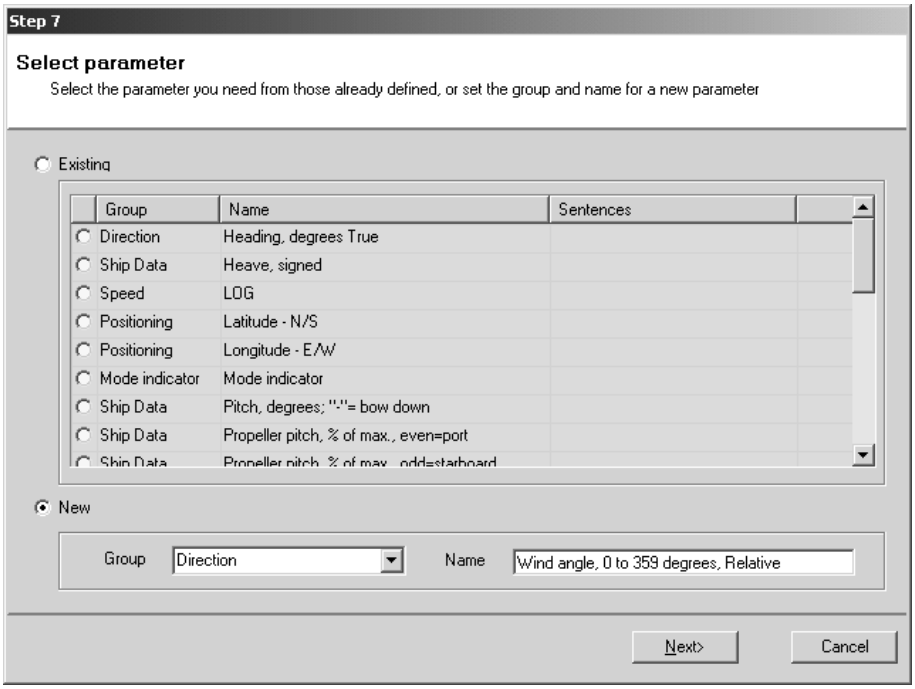
Press “Parameters” button in the bottom part of the window.

ATTENTION!

The previously set sentence structure is displayed in “Select Parameter” window and cannot be edited at this stage.



To add a parameter, which the retrieval-from-sentence rules should be defined for, press “Add” button in “Select parameter” window.



To enter the parameter group and name, perform one of the following procedures:

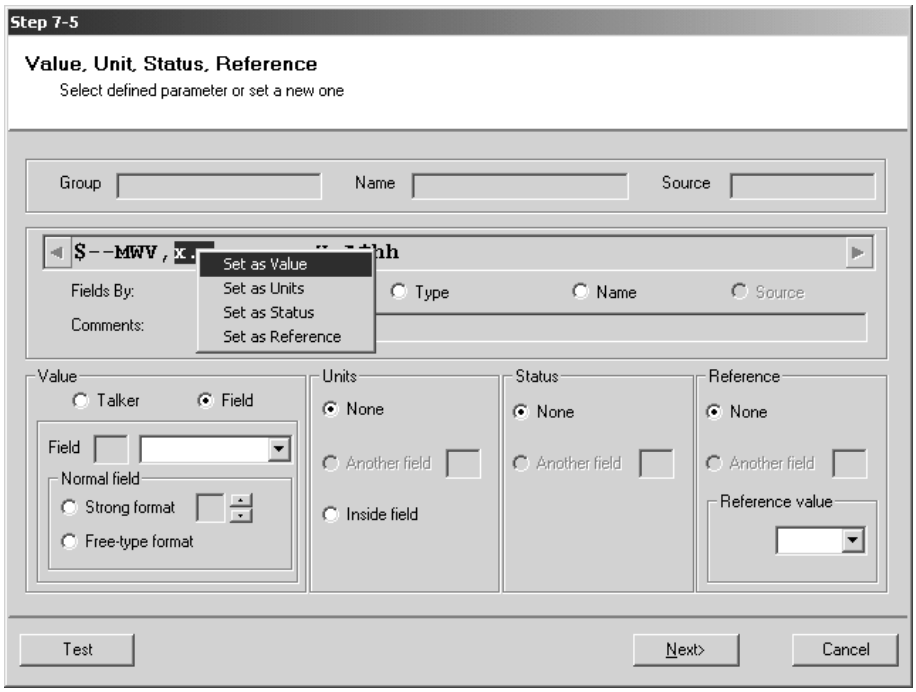
- Select **Existing** option button and select the parameter from the list;
- Select **New** option button. Use Group text box to enter the name of the parameter group. Parameters are combined by the functional principle. The division of parameters into groups is then used in the further NC operation. Use Name text box to enter the name of the parameter itself.

Press “Next>” button.

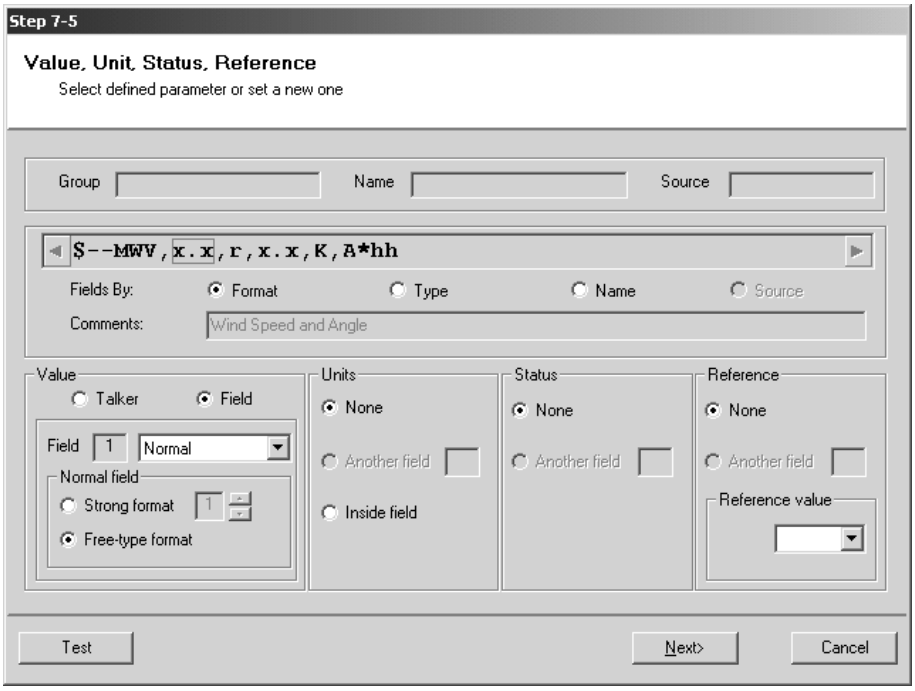
Setting of Parameter Value

1. Setting field with “Value” characteristic for the parameter value.

   In “Value, Unit, Status, Reference” window, which will open up, position the cursor on the field of the sentence containing the value of the necessary parameter and press the right trackball/mouse button.



   To set the parameter value, select SET AS VALUE line from the context menu. E.g. for MWV sentence, the first field should contain the value of the wind angle.

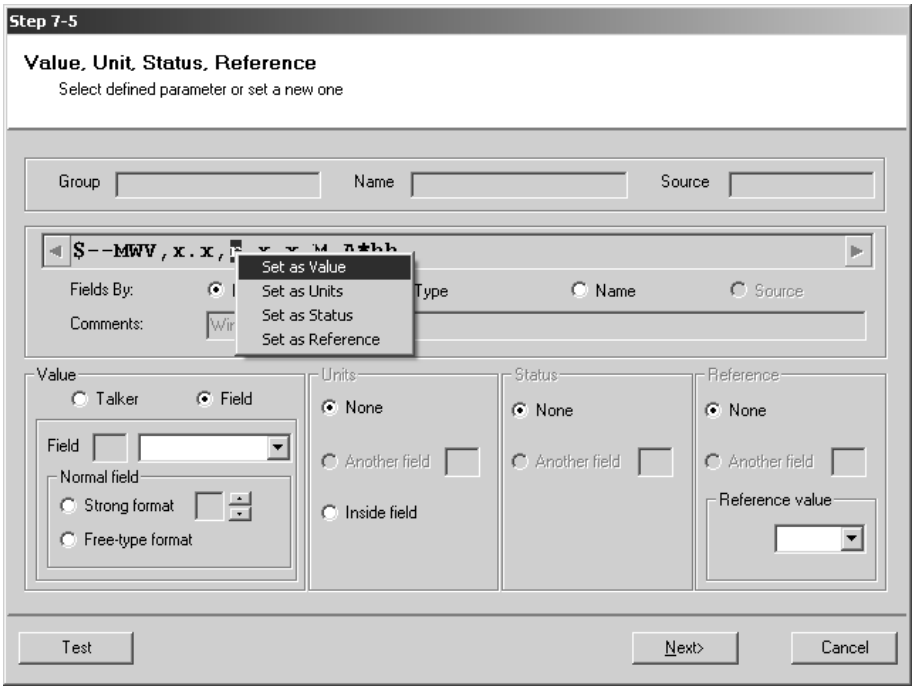


The field, which you are editing, will be delineated in red. Field box shows the number of the field, which is being edited.

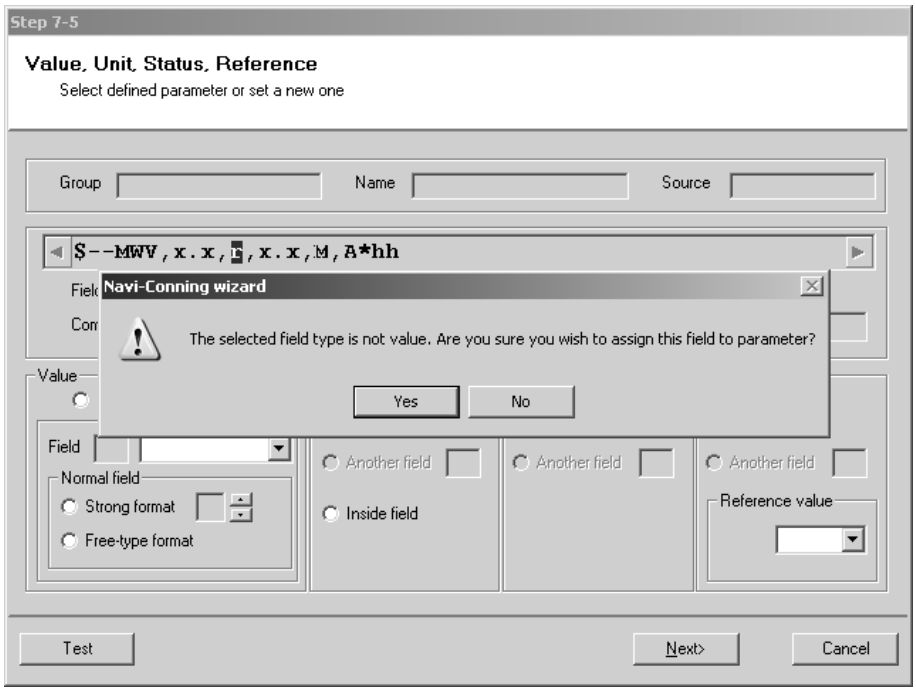
2. Setting a field with any characteristic except “Value” for the parameter value.

   In adjusting a parameter, the NC program allows any sentence field to be specified as its value (including Unit, Status or Reference), as well as Talker. Such parameter can further be used for the adjustment of “Data Characteristic” type indicators (see paragraph **Data Characteristics** of **Chapter 2** document **NAVI-CONNING 3000 (V. 4.01.00). USER MANUAL**).

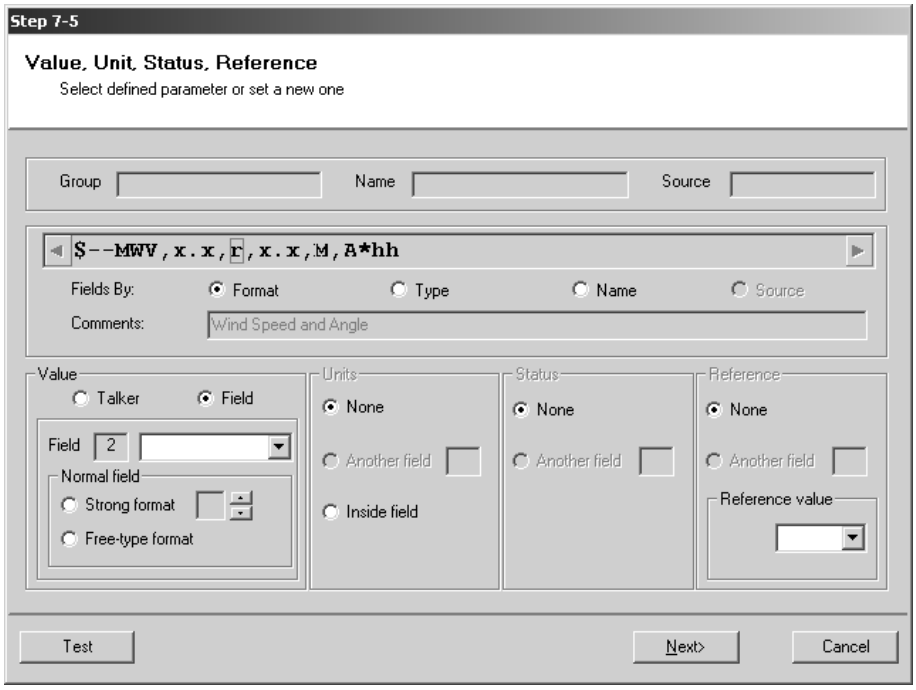
   To set Unit, Status or Reference for the parameter value, position the cursor on the field containing any of these characteristics and press the right trackball/mouse button.



Select SET AS VALUE line from the context menu.



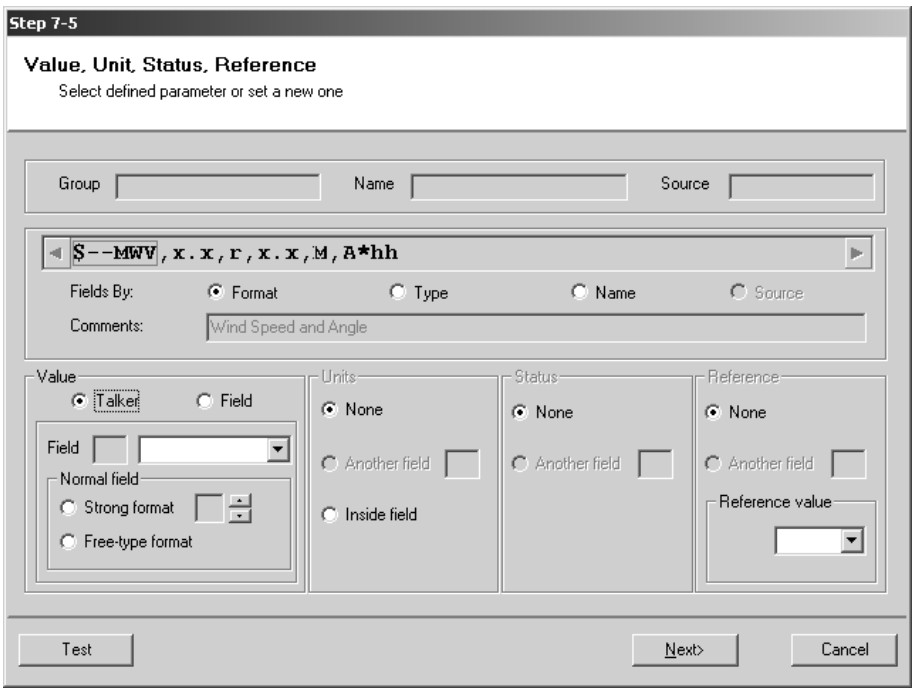
The program will provide a warning that this field is not a “Value” characteristic. Press “Yes” button.



The field, which you are editing, will be delineated in red.

3. Setting a field containing Talker as a parameter value.

   To set Talker for the parameter value, check **Talker** checkbox in **Value** group.



   The talker field will be delineated in red.

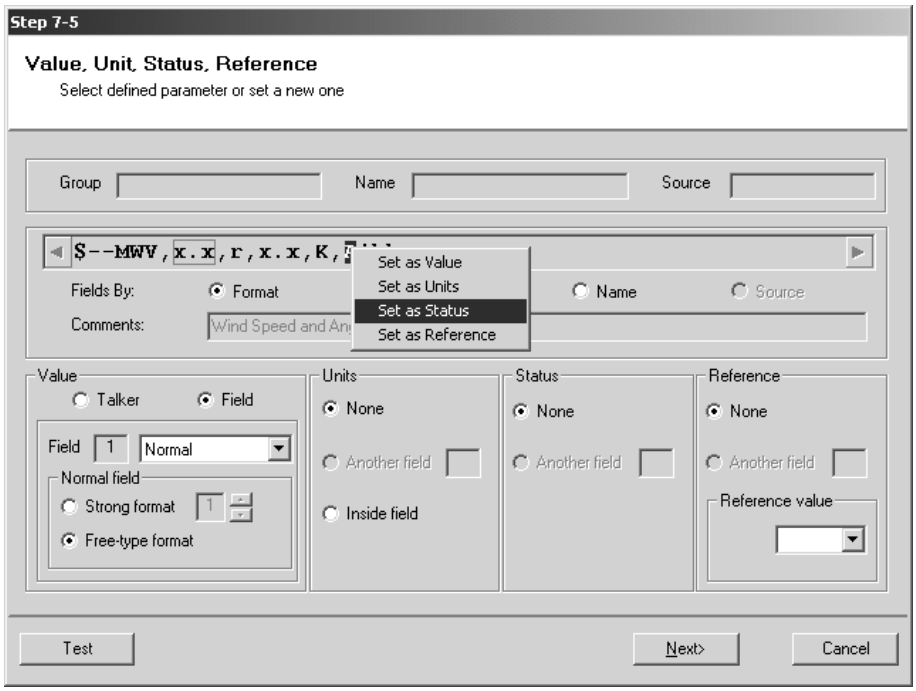
Setting of Parameter Measurement Units

By default, **None** checkbox of **Units** group is checked for the parameter, which has no measurement units.

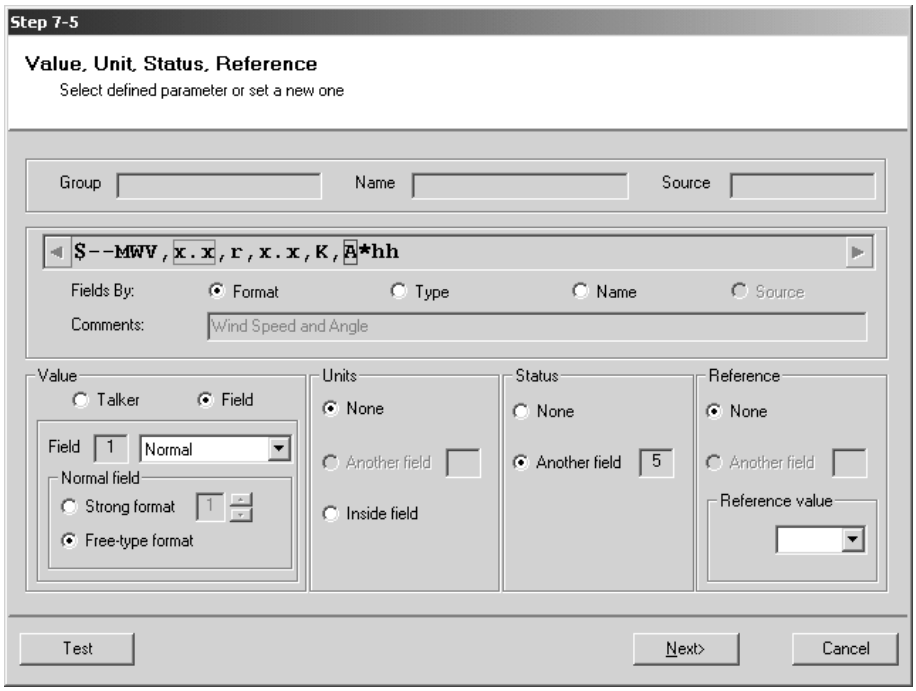
The parameter, which is being set, has constant measurement units (see paragraph **Parameter Measurement Units**), which are located within the field containing this parameter value. Select **Inside Field** option button of **Units** group (e.g. for “Wind angle” parameter).

Setting of Parameter Status

Position the cursor on the field determining the parameter status and press the right trackball/mouse button.

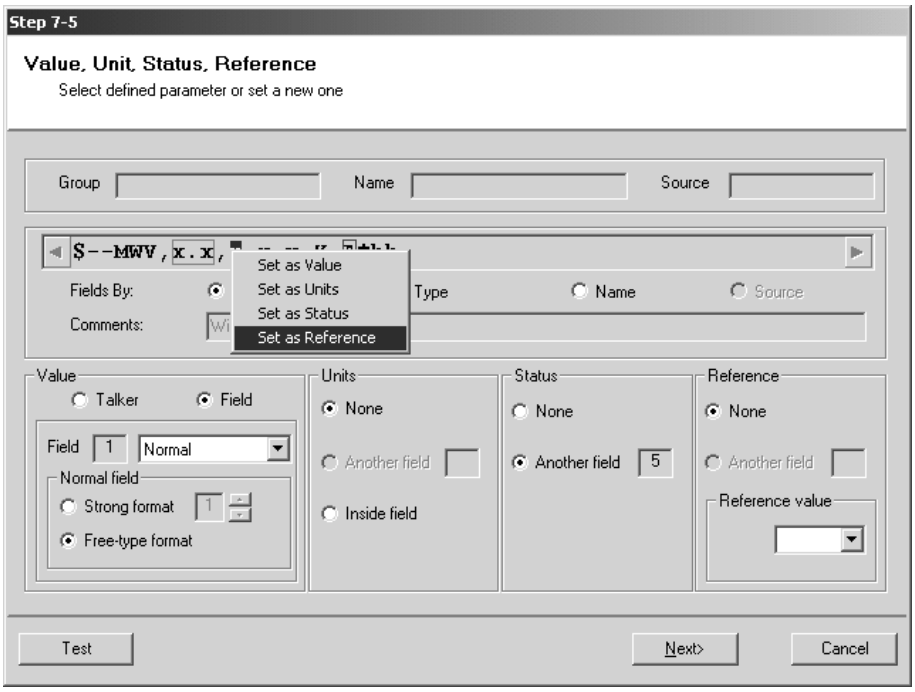


To set the parameter status, select SET AS STATUS line from the context menu. The edited field will be shown in a dark blue coloured frame.

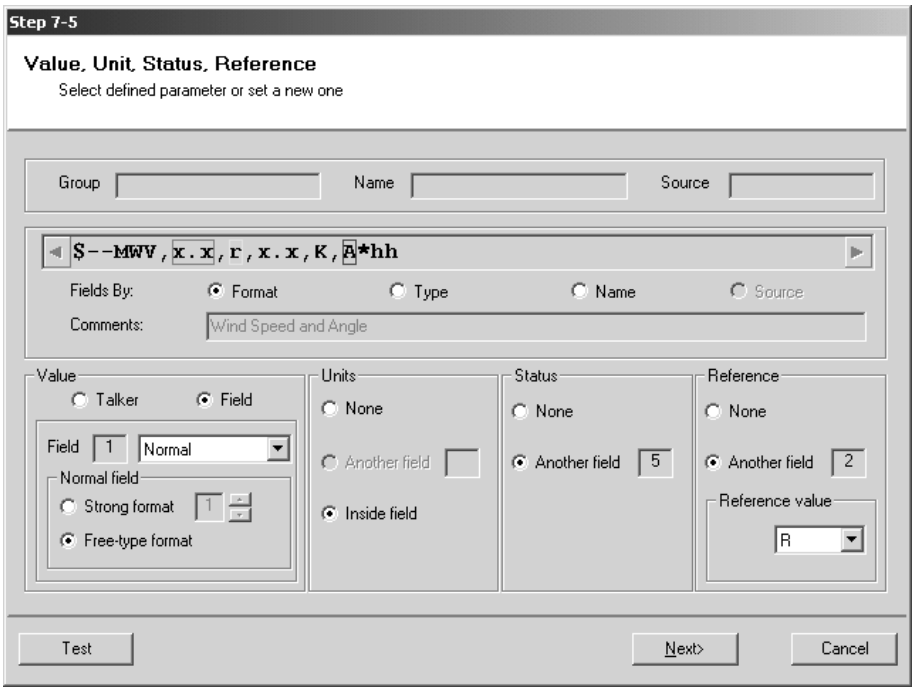


Setting of Parameter Reference

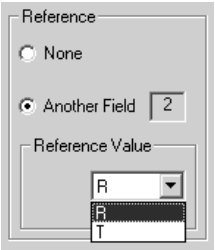
Position the cursor on the field determining the parameter reference and press the right trackball/mouse button.



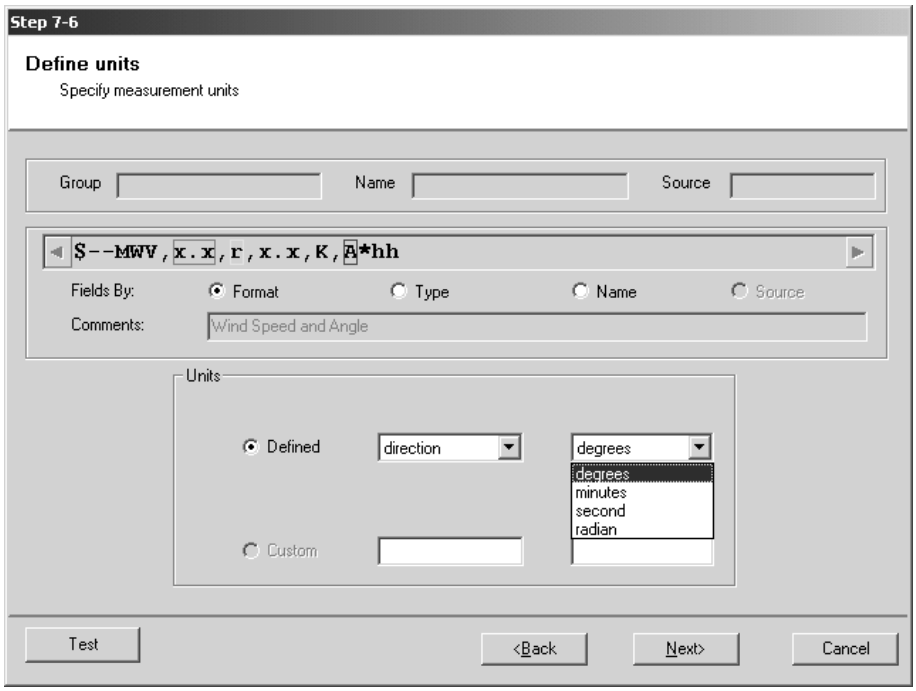
To set the parameter reference, select SET AS REFERENCE line from the context menu. The edited field will be shown in a blue coloured frame.



Use **Reference Value** input box of **Reference** group to select a reference from the drop-down list corresponding to the parameter, which is being set (see paragraphs **Parameter Reference** and **Creating of New Sentences**). E.g. for “Wind angle, 0 to 359 degrees, Relative” parameter in MWV sentence, this will be “R”.



Press “Next>” button.



Select the name of group and measurement units in **Units** group.

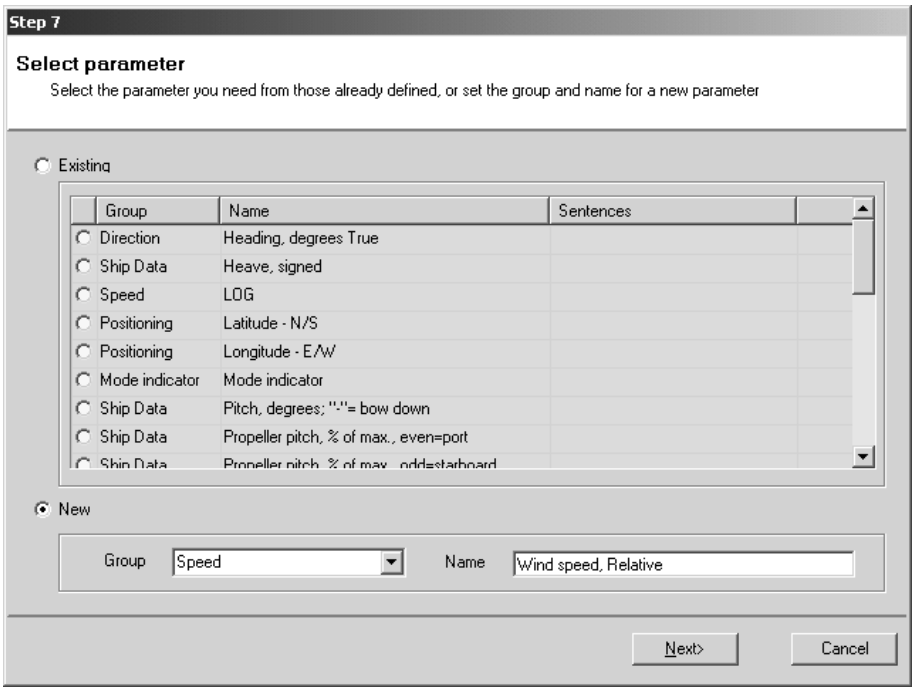
ATTENTION!

Groups and measurement units they include are set in advance in *Tools\Settings\Units of meas.* menu (see paragraph **Creating and Editing of Measurement Unit Database** of this chapter).

Press “Next>” button.

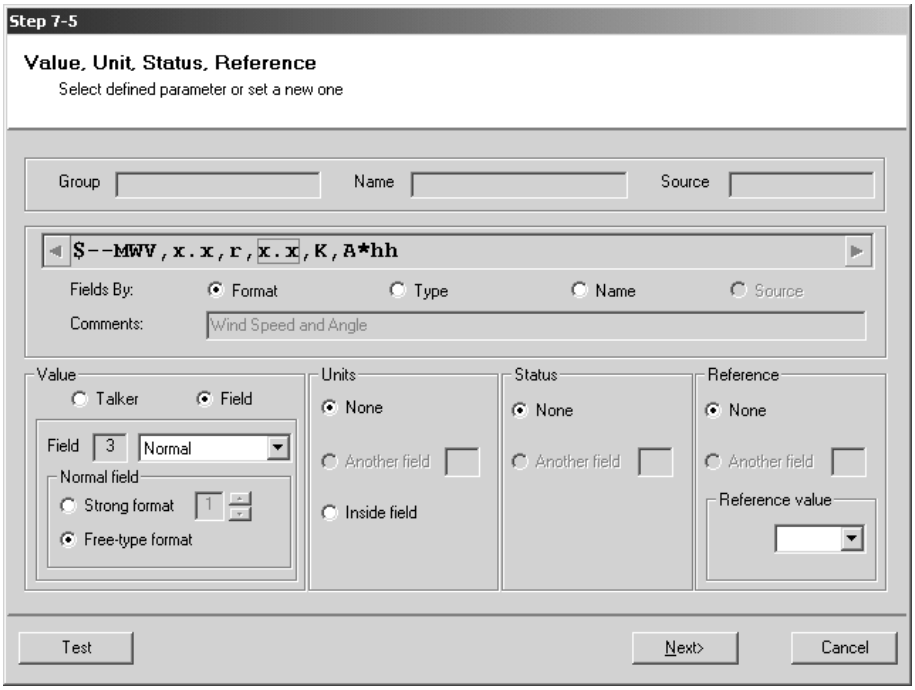
"Select parameter" window will open up. Input of rule for the extraction of a sentence parameter is completed. The parameter is added to the table.

Enter the rules of retrieving the next sentence parameter, e.g. "Wind speed, Relative", which contains variable measurement units. To do this, press "Add" button.

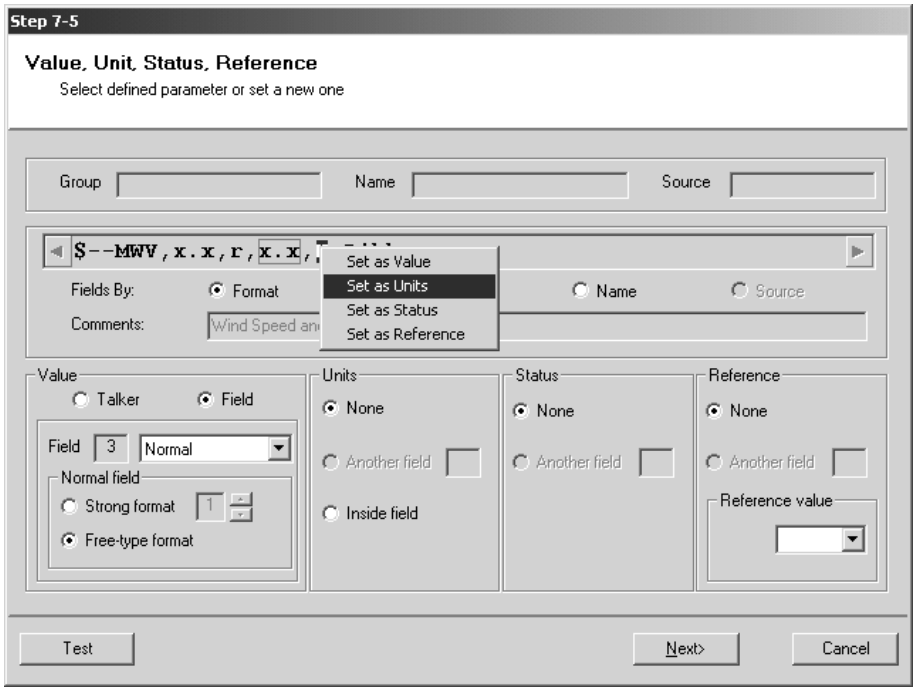


Use **Group** input box to enter the parameter group name. Use **Name** input box to enter the name of the parameter itself. Press "Next>" button.

Set the parameter value as described above for "Wind angle, 0 to 359 degrees, Relative" parameter (see item **Setting of Parameter Value**).

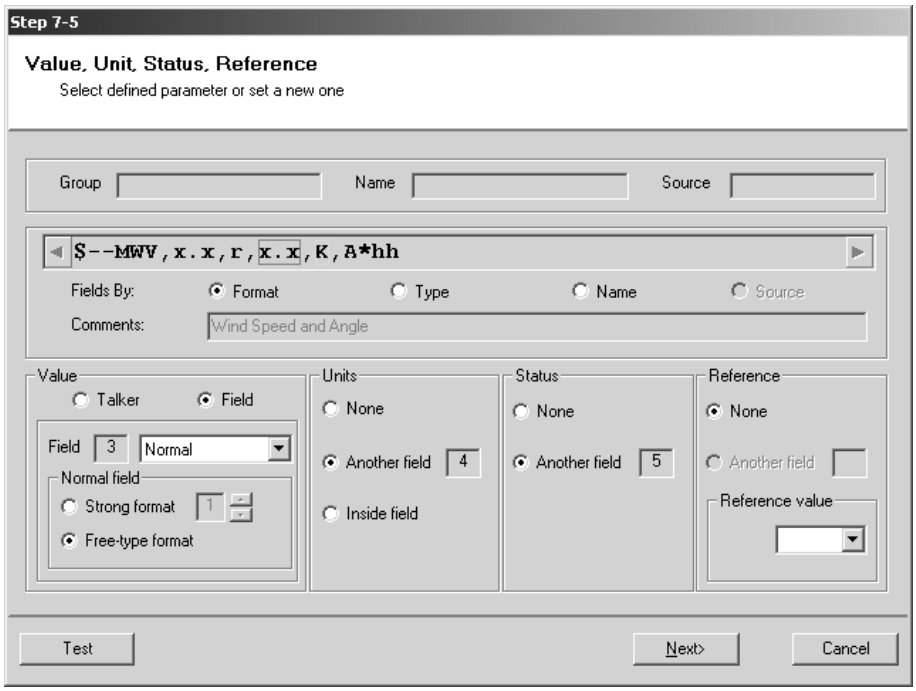


This parameter has variable measurement units (see paragraph **Parameter Measurement Units**) determined by the identifier, which arrives in a separate field, position the cursor on this field and press the right trackball/mouse button.



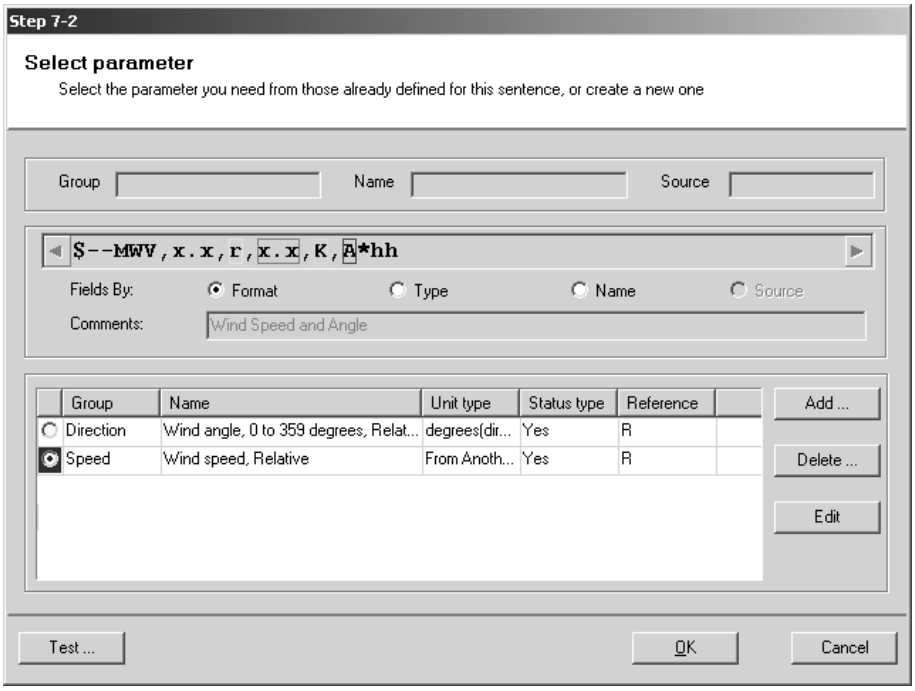
To set the parameter measurement units, select SET AS UNITS line from the context menu.

The edited field will be shown in a green coloured frame.



Set the parameter status and reference as described above.

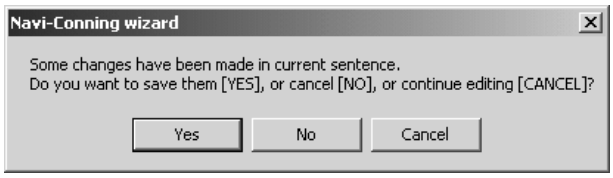
Press “Next>” button.



"Select parameter" window will open up. The parameter is added to the table of parameters, which the sentence consists of.

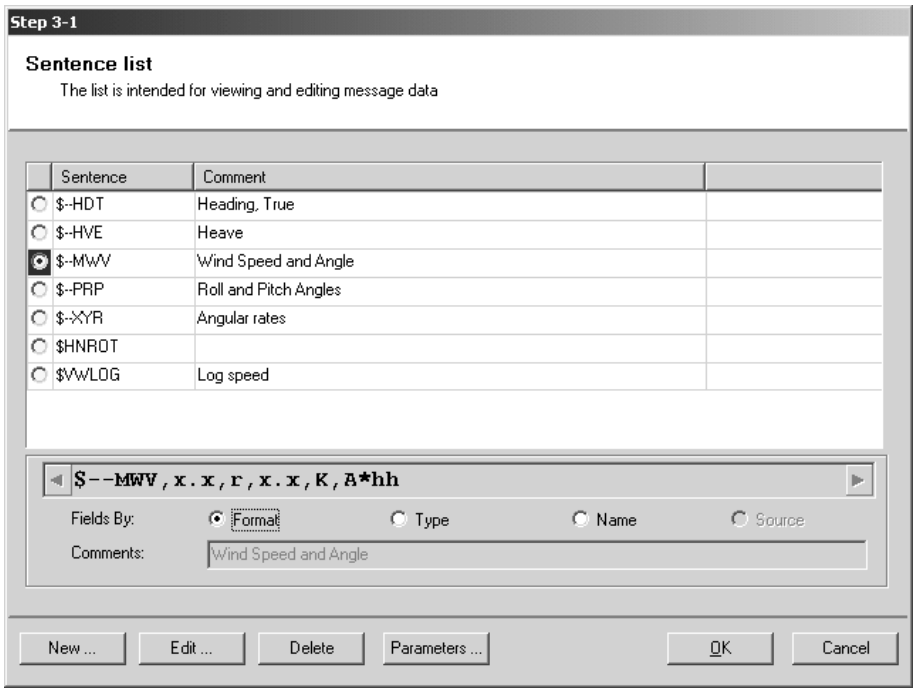
ATTENTION!

If "Cancel" button is pressed in the process of parameter creating or editing, the program will display a request to save the changes you have made.


Navi-Conning wizard
Some changes have been made in current sentence.
Do you want to save them [YES], or cancel [NO], or continue editing [CANCEL]?
Yes
No
Cancel

Use "Add" button to set the rules of extracting all the necessary parameters.

Press “OK” button in “Select parameter” window to exit to “Sentence list” window.

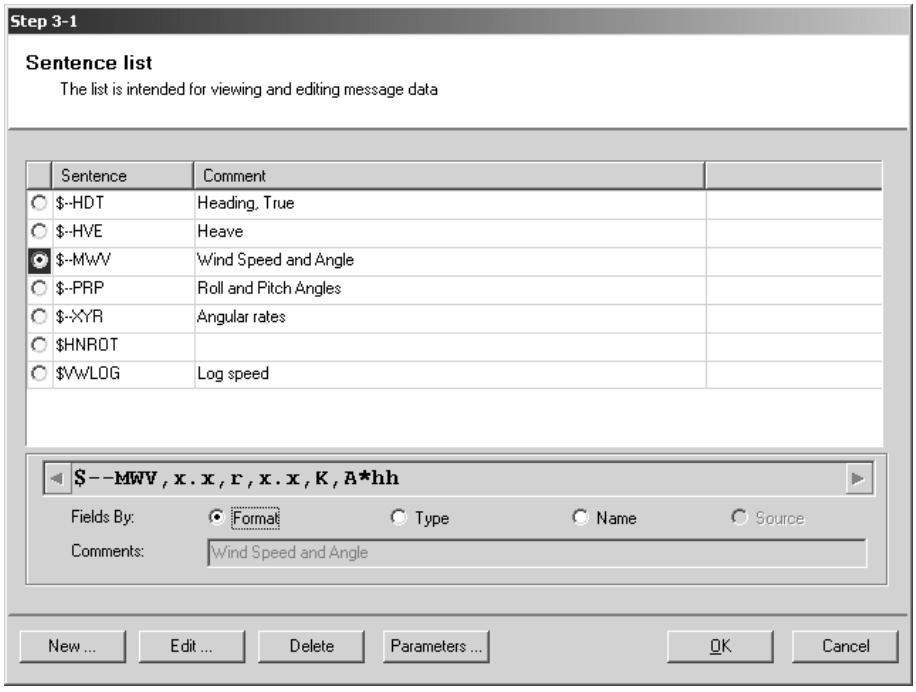


“Sentence list” window will open up. Input of new sentence and its parameters in the databases is completed. The entered sentence is displayed in the table.

Press “OK” button to save the entered parameters and the sentence in the appropriate databases and exit to the Sentence Editor of “Navi-Conning 3000 Setup” utility’s Main window.

Editing of Parameters

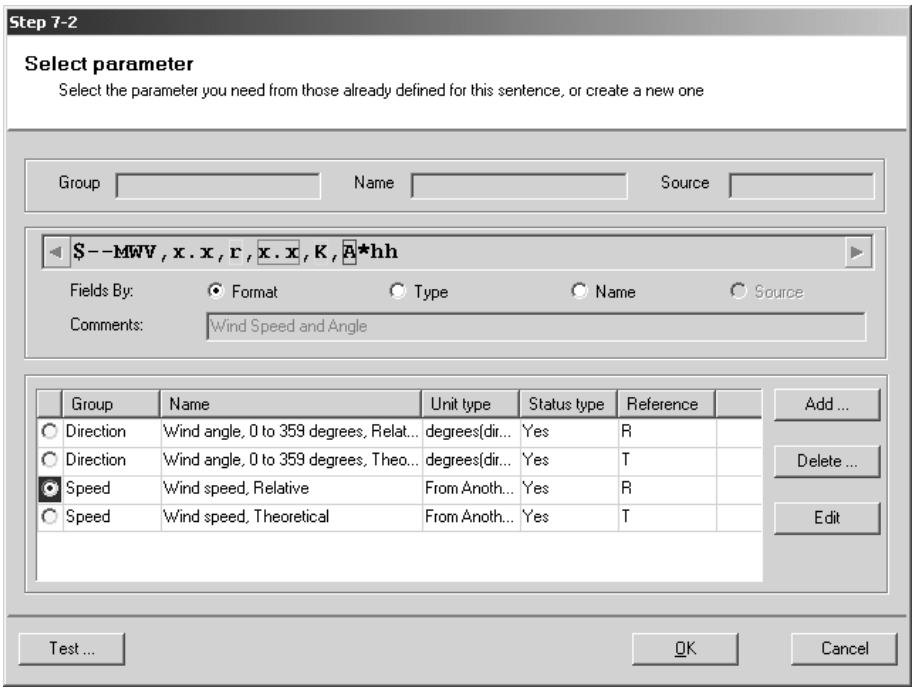
In “Sentence list” window, select a sentence whose parameter is required to be edited and press “Parameters” button.



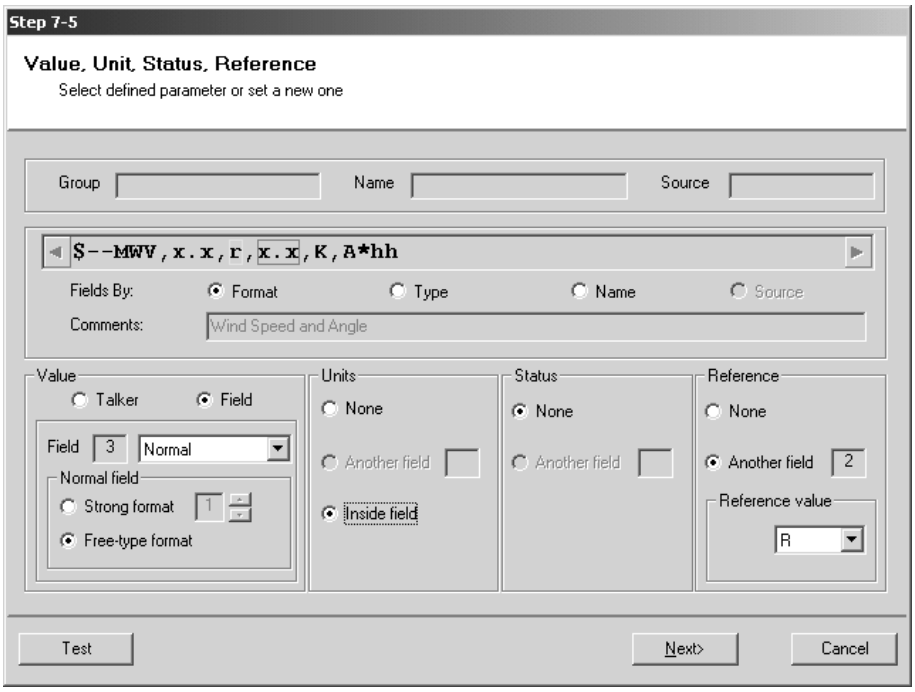
Use the table to select the parameter required to be edited.

ATTENTION!

When as sentences are created on the basis of their copying from the databases of different NMEA versions, it is necessary to remember that in the table of parameters their order does not always correspond to the order of parameters in a sentence.



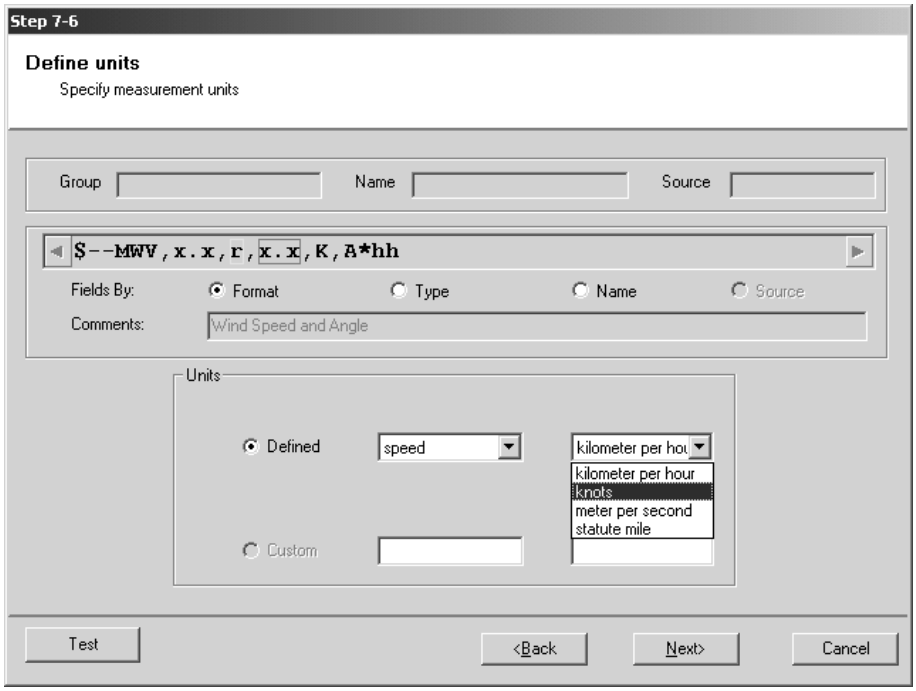
Press “Edit” button. Edit the parameter characteristics. E.g. for “Wind speed” parameter you can set constant measurement units (Inside field) and remove the status (None).



ATTENTION!

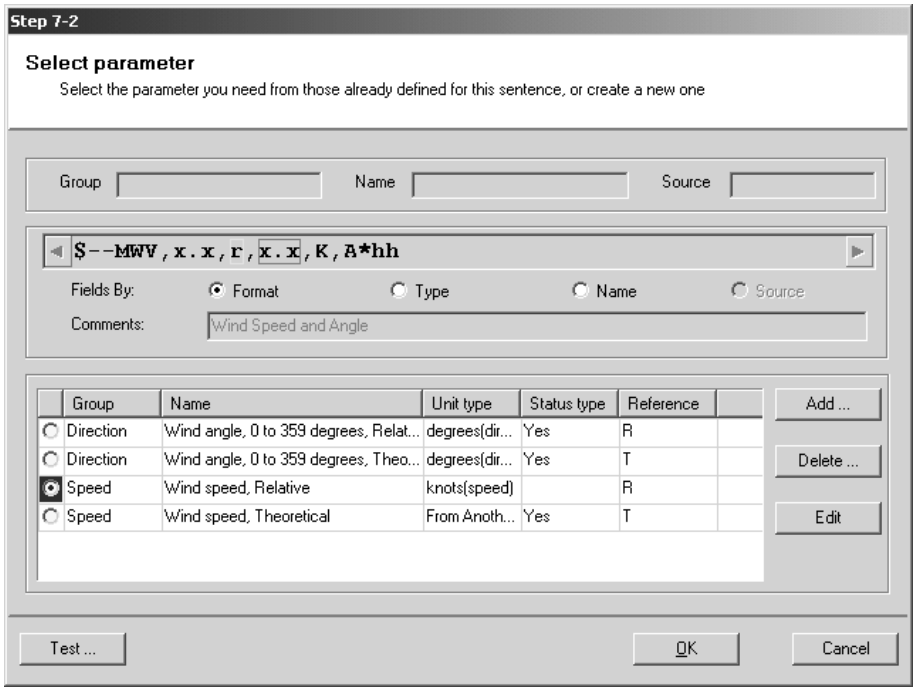
In the editing mode, it is possible to change parameter characteristics within the framework of the existing sentence structure. For the editing of the sentence structure, see the next paragraph.

Press “Next>” button.



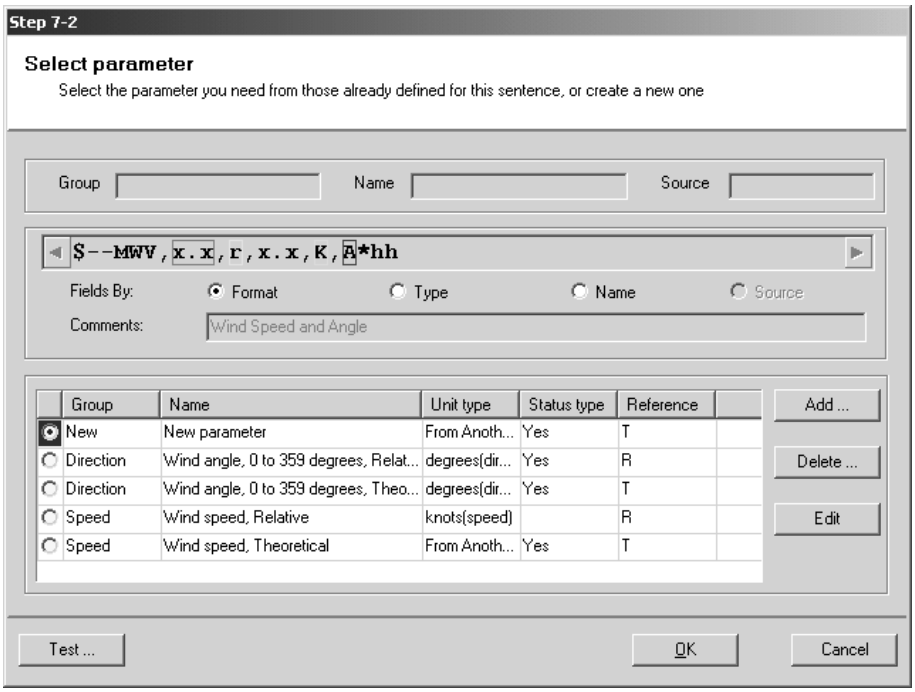
Select the name of group and measurement units in **Units** group.
Now value of wind speed will have always dimension of “knots”, regardless of dimension in the following field.

Press “Next>” button.



The table will reflect the appropriate changes.

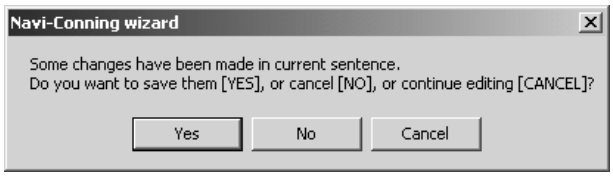
The sentence editor facilities allow a new parameter to be added as required. E.g. a parameter, which has a value from the first sentence field and variable measurement units from the fourth field.



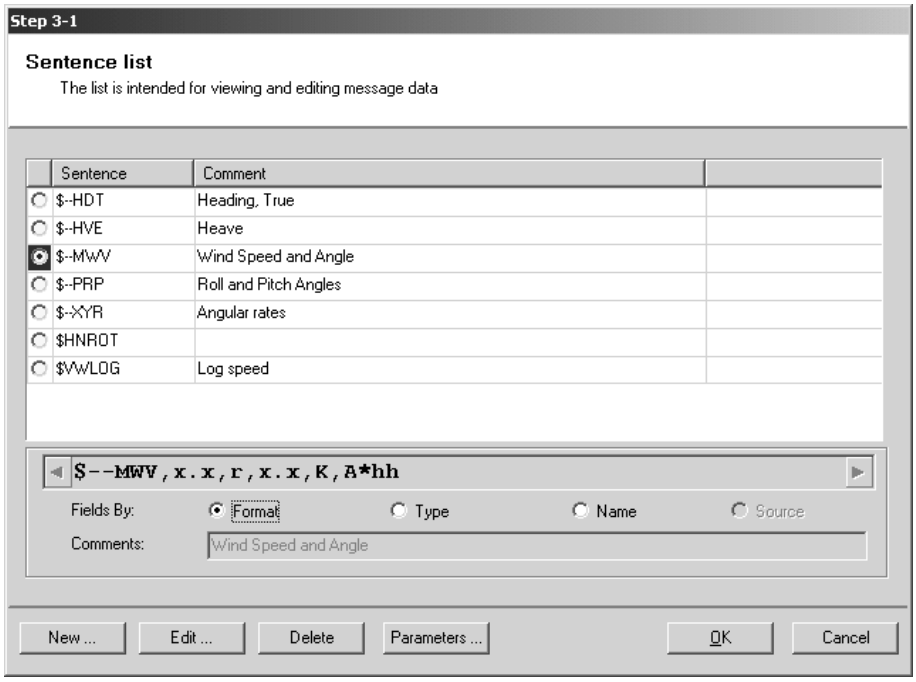
Edit all the necessary parameters.

ATTENTION!

If “Cancel” button is pressed in the process of parameter creating and editing, the program will display a request to save the changes you have made.


Navi-Conning wizard
Some changes have been made in current sentence.
Do you want to save them [YES], or cancel [NO], or continue editing [CANCEL]?
Yes
No
Cancel

Press “OK” button in “Select parameter” window to exit to “Sentence list” window.



"Sentence list" window will open up.

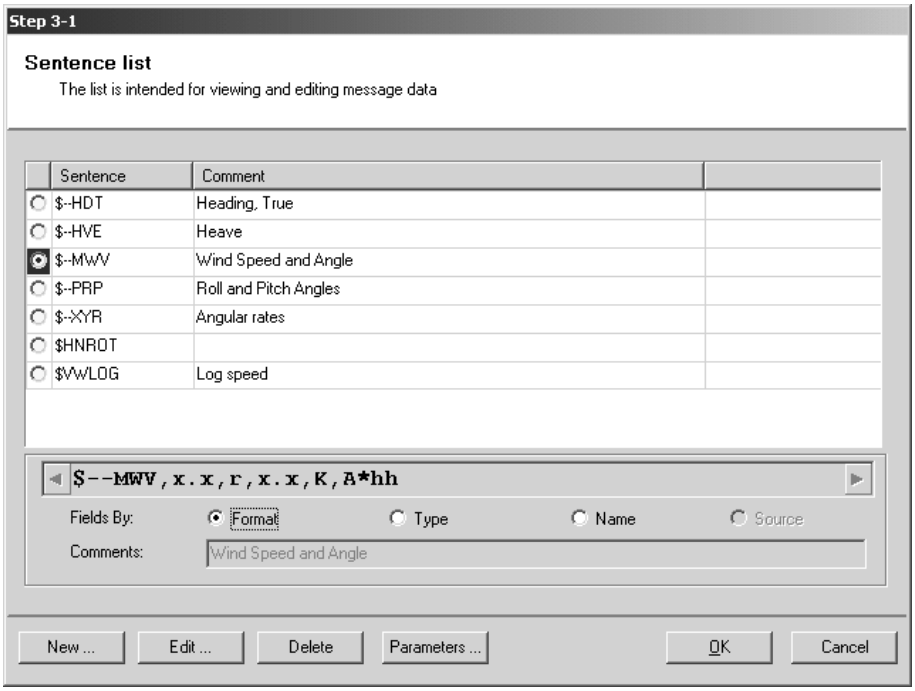
Press "OK" button to save the entered parameters and the sentence in the appropriate databases and exit to the Sentence Editor to the Main window of "Navi-Conning 3000 Setup" utility.

Parameters Deletion

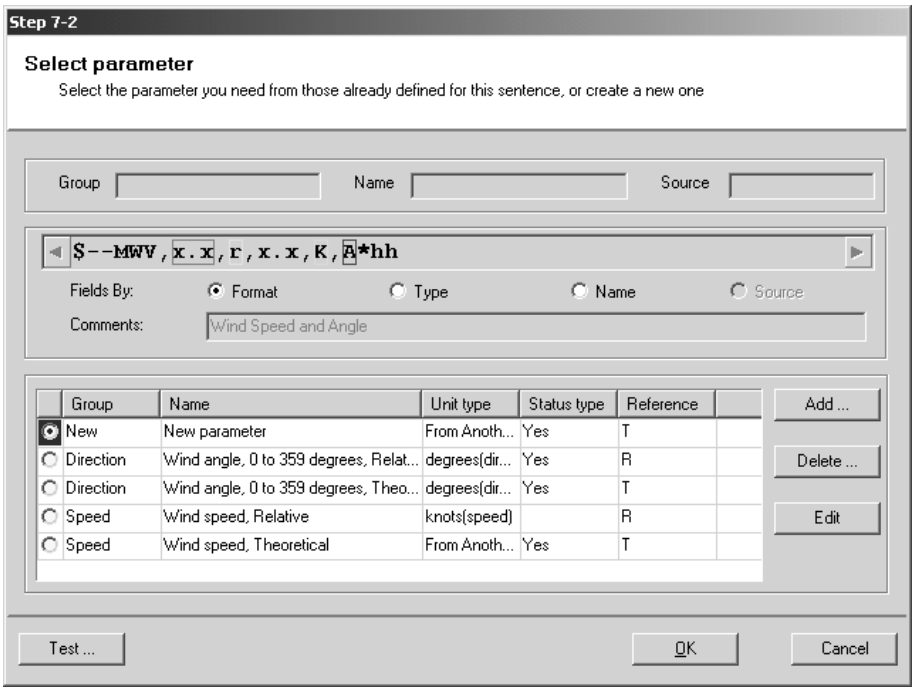
ATTENTION!

Parameters can be deleted from the customized databases only. As this is done, adjustment of indicators for this parameter will be lost.

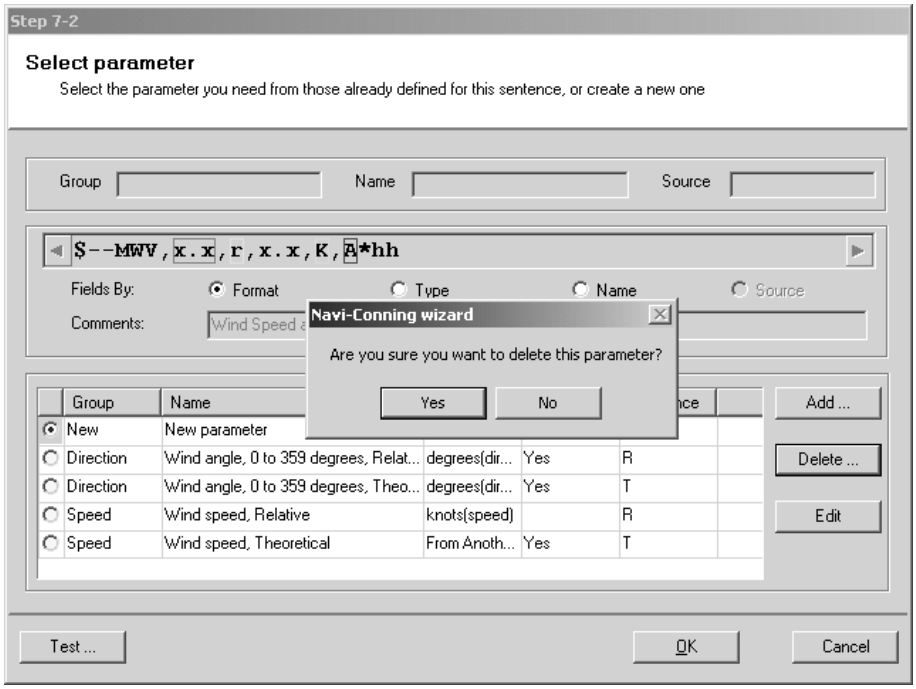
In "Sentence list" window, select a sentence whose parameter is required to be deleted. Press "Parameters" button.



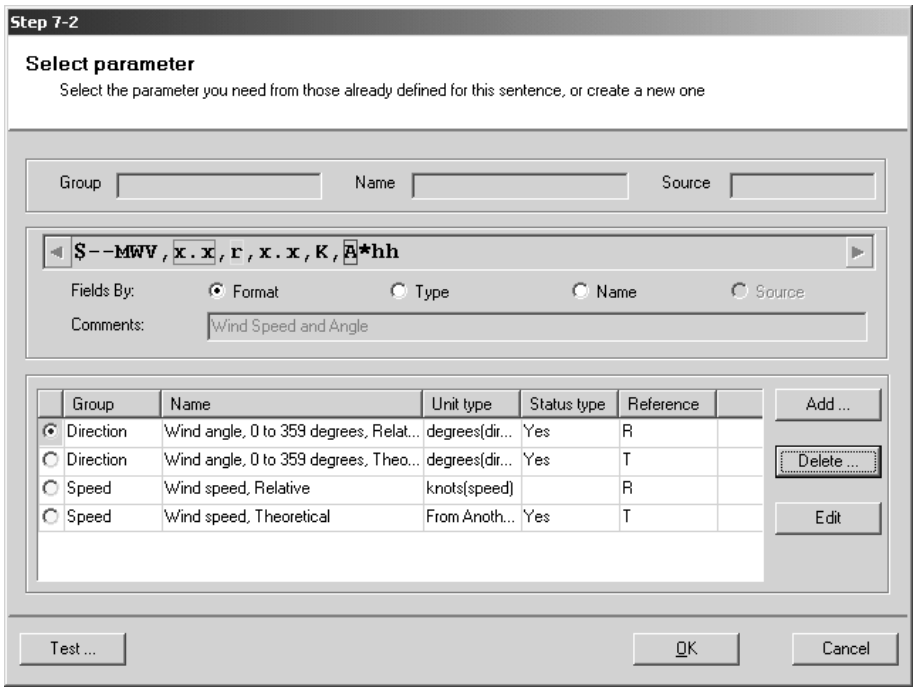
Select the parameter required to be deleted from the table.



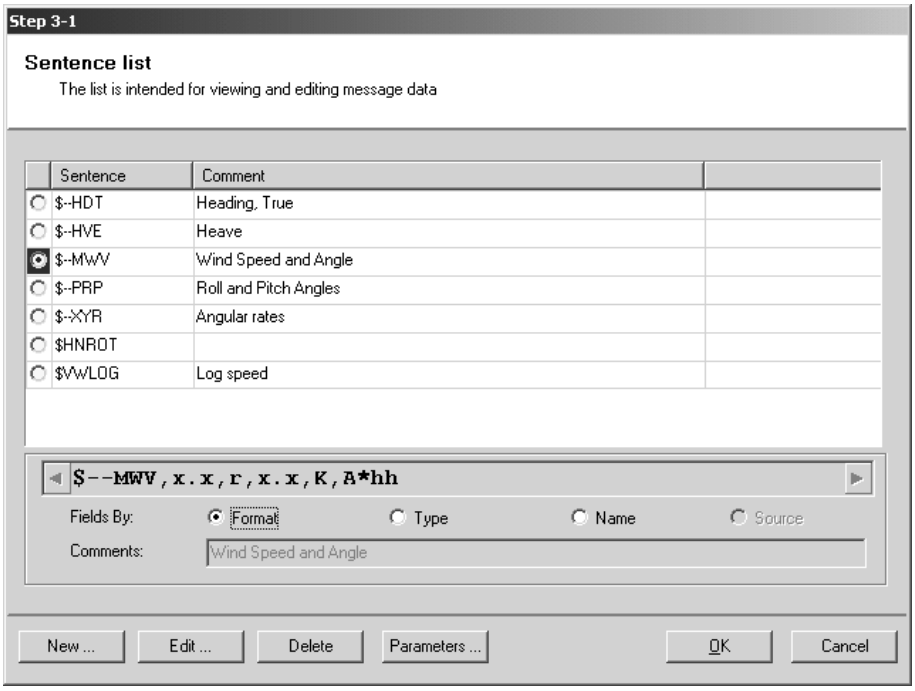
Press “Delete” button.



Press “Yes” button to confirm the deleting of the parameter.



Press “OK” button to exit from “Select parameter” window.



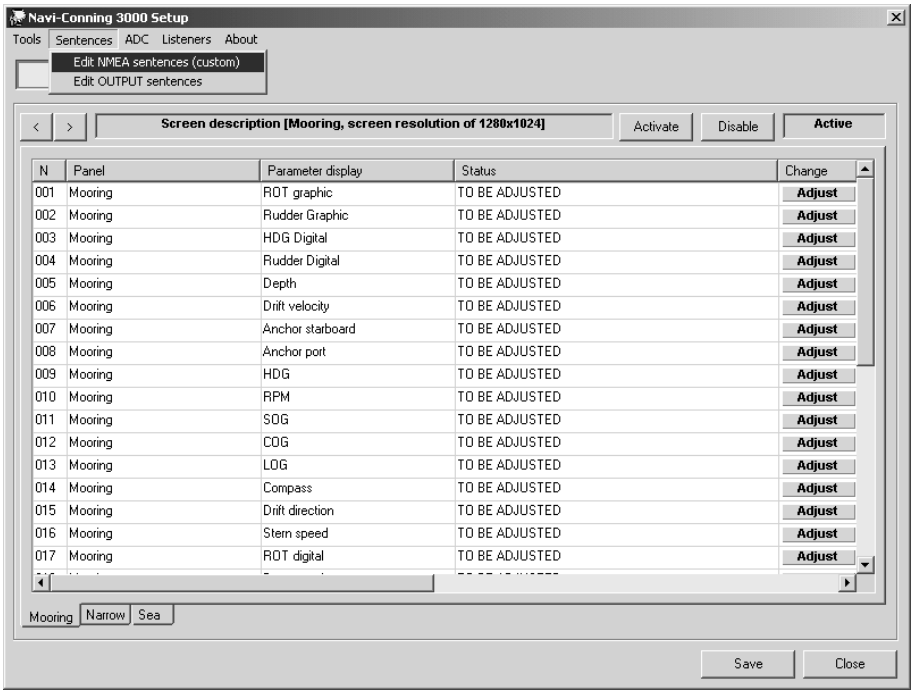
"Sentence list" window will open up.

Press "OK" button to save the changes you have made and exit to the Sentence Editor of "Navi-Conning 3000 Setup" utility's Main window.

Press "Save" button in the Main window of "Navi-Conning 3000 Setup" utility to save the changes you have made.

Editing Sentence (By the Example of APB Sentence)

Open SENTENCES option of the utility's Main menu.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Edit OUTPUT sentences
Screen description [Mooring, screen resolution of 1280x1024]
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Parameter display
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001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
003 Mooring HDG Digital TO BE ADJUSTED Adjust
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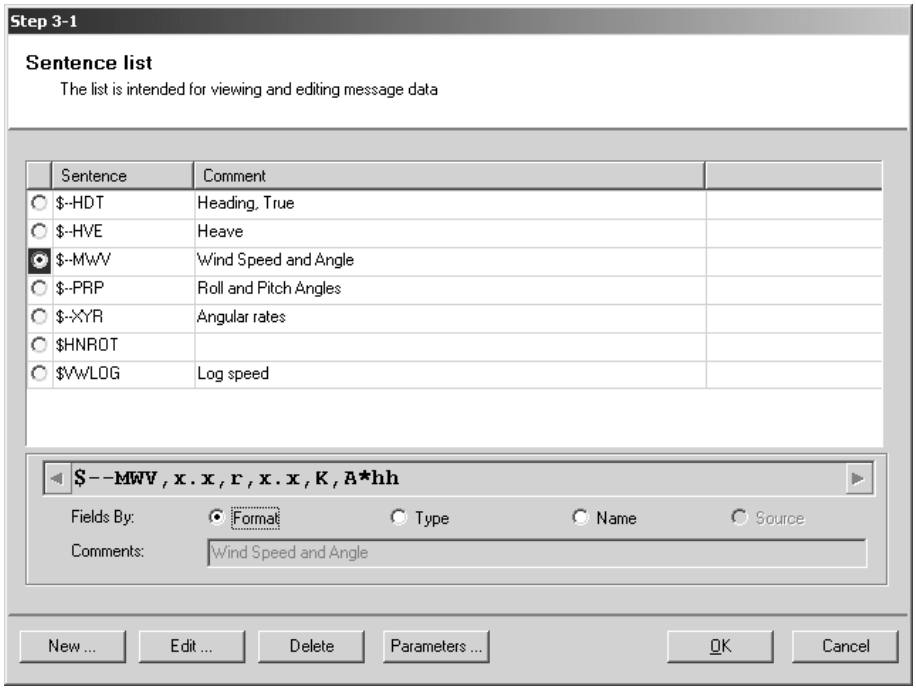
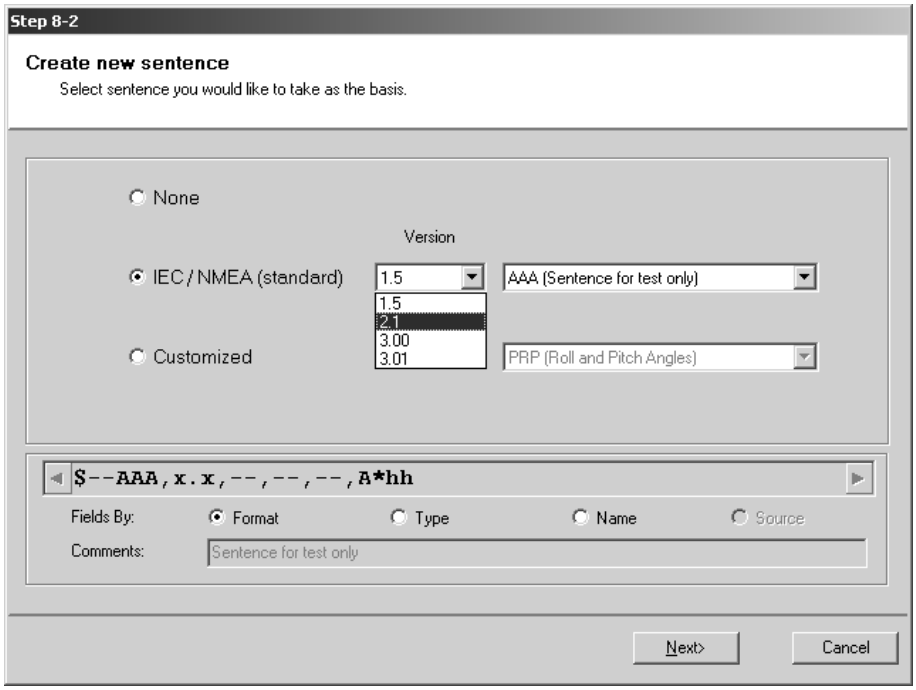
014 Mooring Compass TO BE ADJUSTED Adjust
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

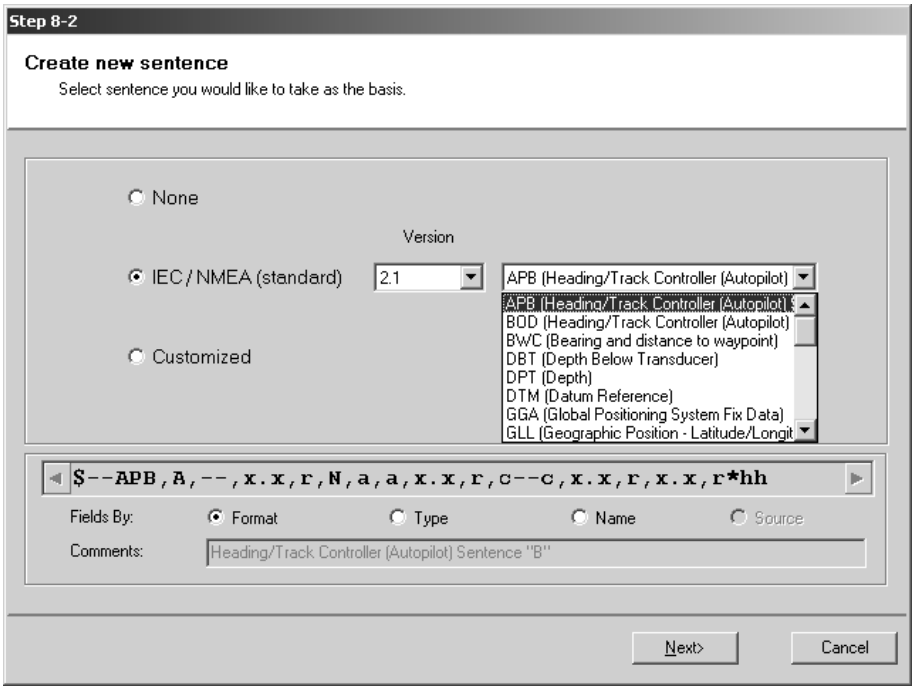
In SENTENCES menu, select EDIT NMEA SENTENCES (CUSTOM) or EDIT OUTPUT SENTENCES option.



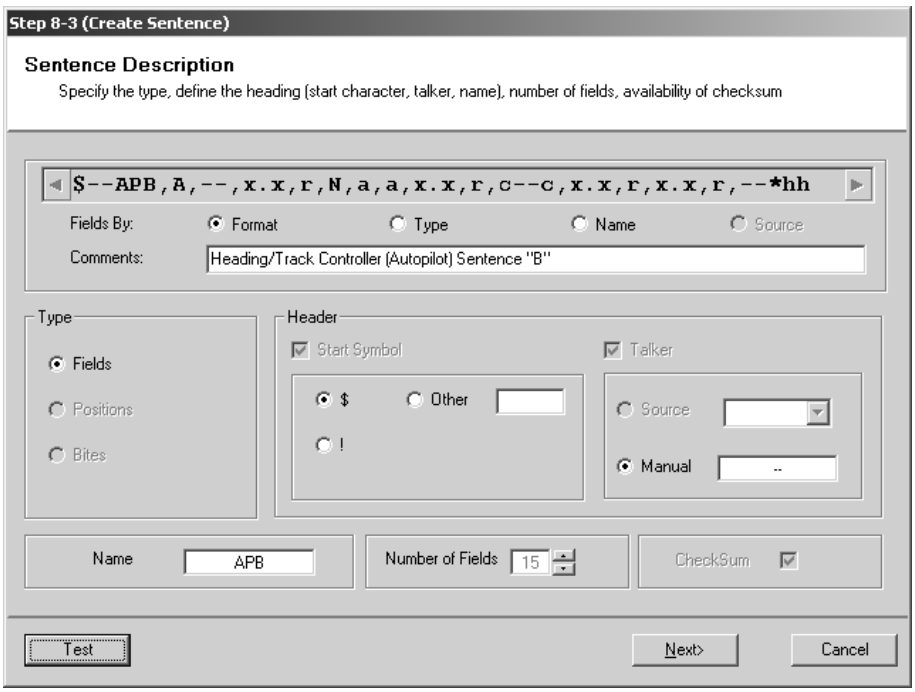
In “Sentence list” window press “New” button.



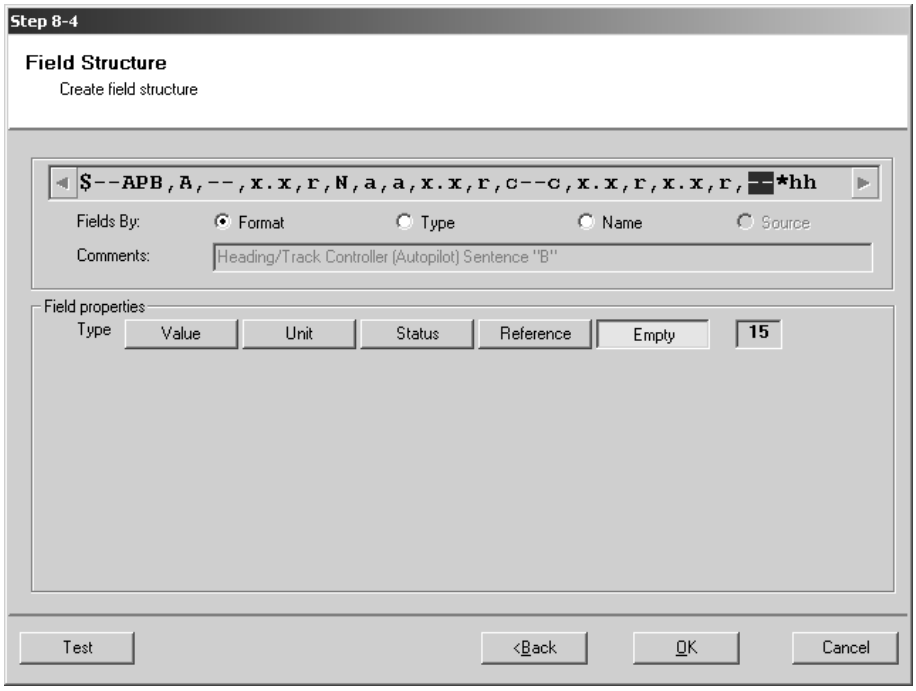
In “Create new sentence” window check **IEC/NMEA (standard)** checkbox. Select “2.1” from **Version** drop-down list.



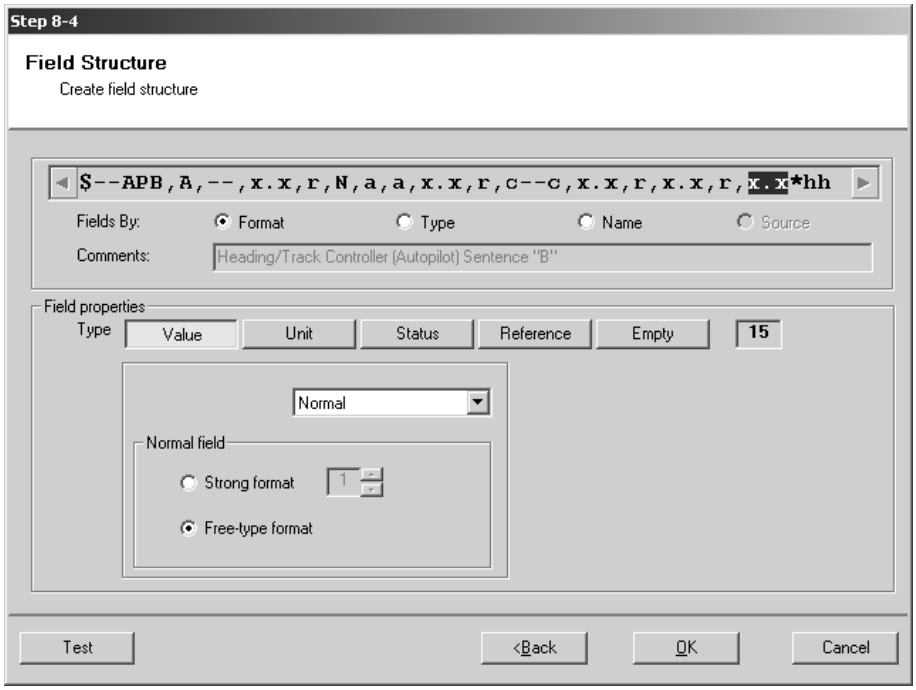
Select “APB” sentence from the drop-down list. Press “Next>” button.



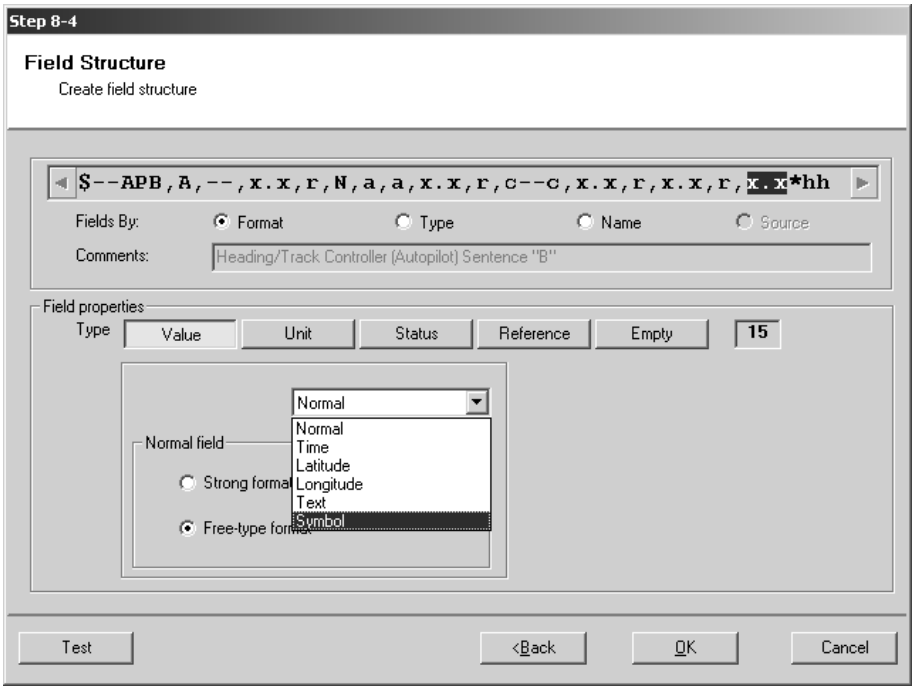
In **Number of Fields** input box enter “15”. Press “Next>” button.



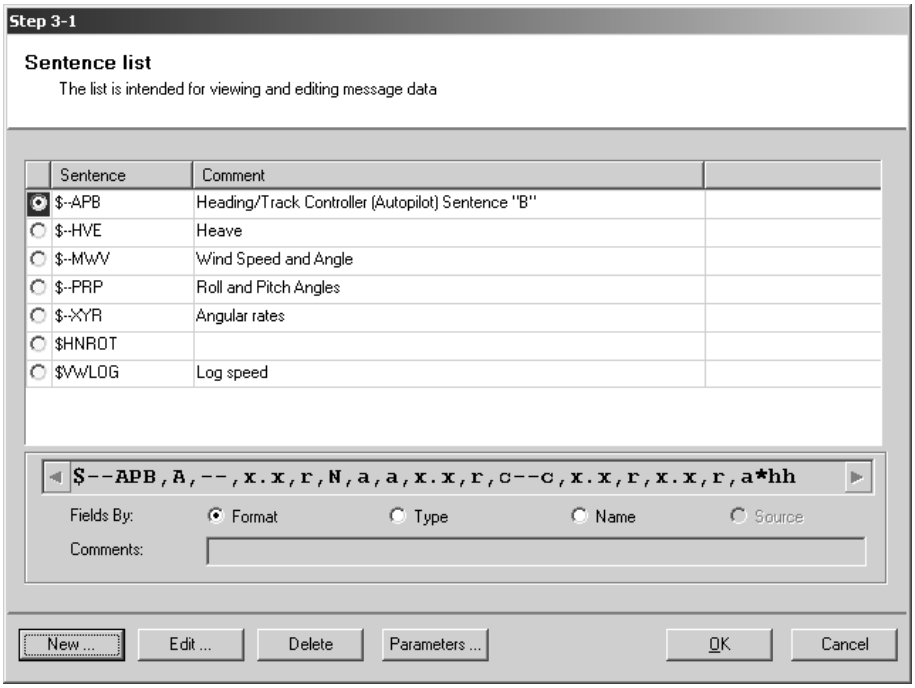
Position the cursor on the last field containing the parameter value and press “Value” button.



Select “Symbol” field type from the drop-down list.

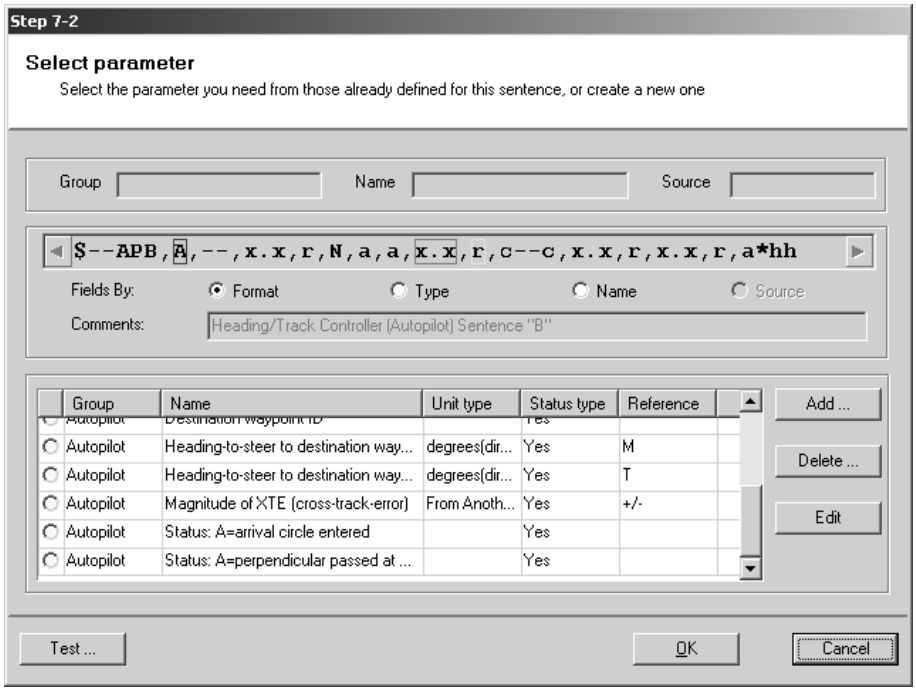


Press “OK” button.

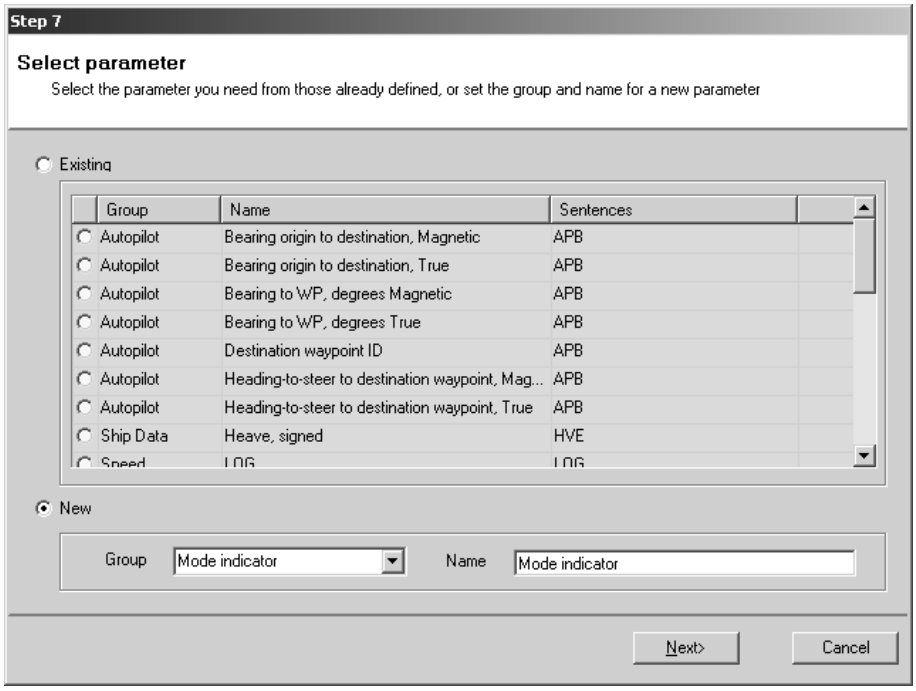


The entered sentence will be added in “Sentence list” window.

Press “Parameters” button.



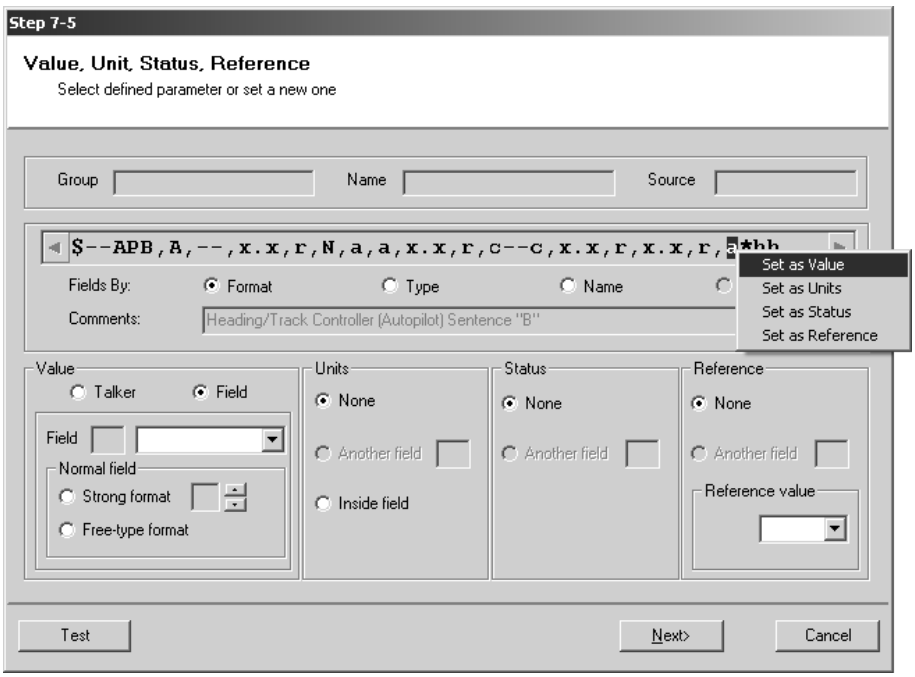
In “Select parameter” window press “Add” button.



Select **New** option button. Use **Group** text box to enter the name of the parameter group and **Name** text box to enter the name of the parameter.

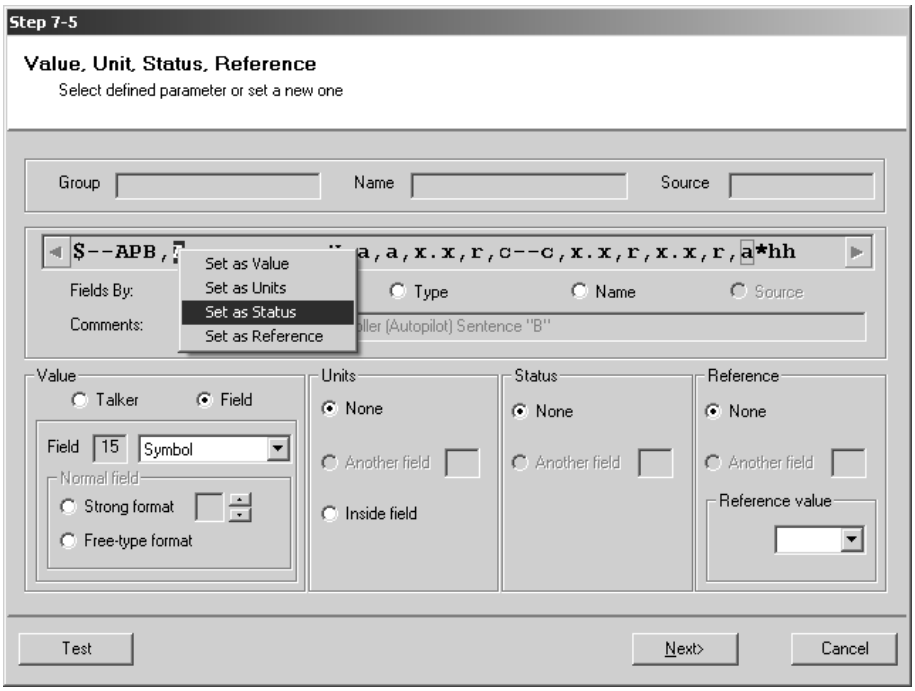
Press “Next>” button.

In “Value, Unit, Status, Reference” window, which will open up, position the cursor on the field of the sentence containing the value of the necessary parameter and press the right trackball/mouse button.



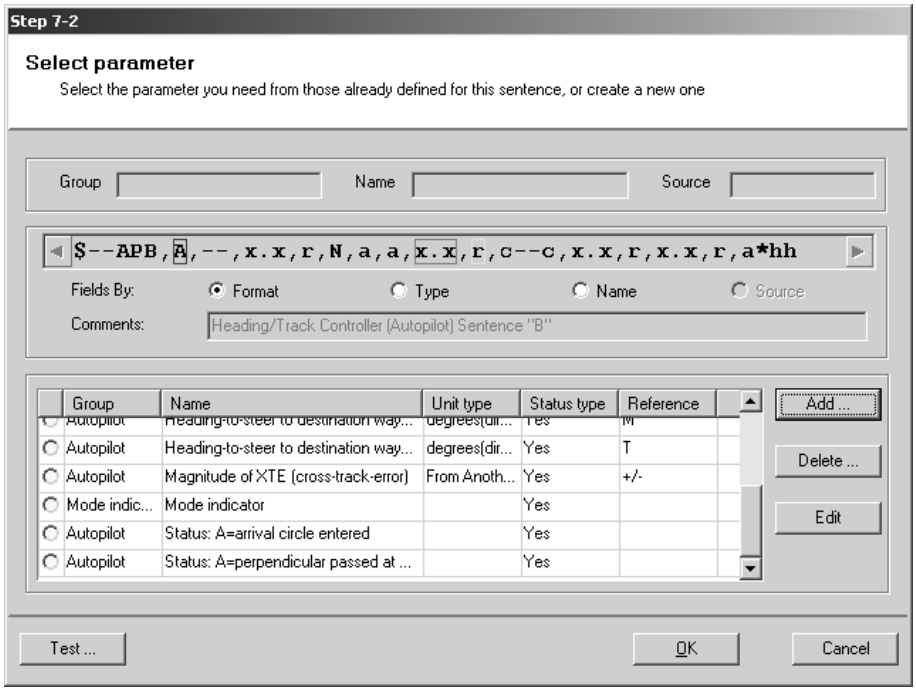
Select SET AS VALUE line from the context menu.

Position the cursor on the field determining the parameter status and press the right trackball/mouse button.



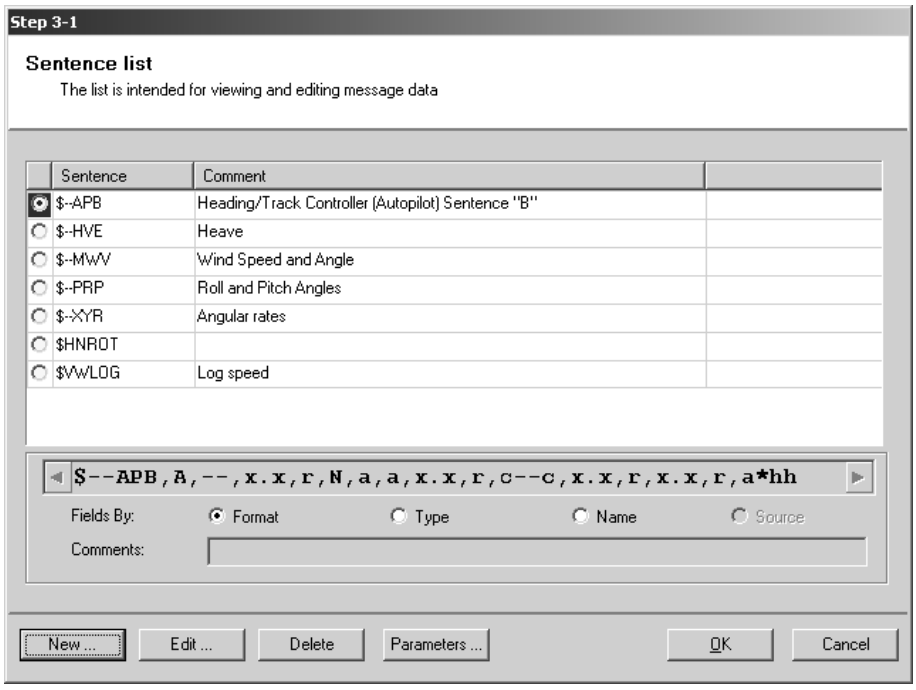
Select SET AS STATUS line from the context menu.

Press “Next>” button.



"Select parameter" window will open up. Input of rule for the extraction of a sentence parameter is completed. The parameter is added to the table.

Press "OK" button.



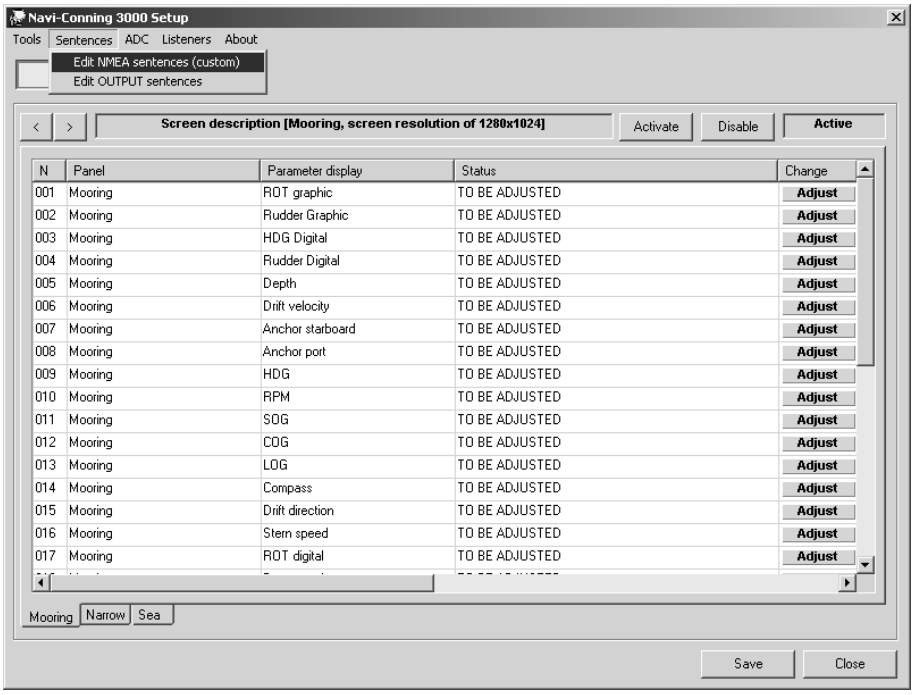
"Sentence list" window will open up. Input of new sentence and its parameters in the databases is completed. The entered sentence is displayed in the table.

Press "OK" button to save the entered parameters and the sentence in the appropriate databases and exit to the Sentence Editor of "Navi-Conning 3000 Setup" utility's Main window.

Press "Save" button in the Main window of "Navi-Conning 3000 Setup" utility to save the changes you have made.

Editing Sentence Structure

Open SENTENCES option of the utility's Main menu.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001 Mooring ROT graphic TO BE ADJUSTED Adjust
002 Mooring Rudder Graphic TO BE ADJUSTED Adjust
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015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
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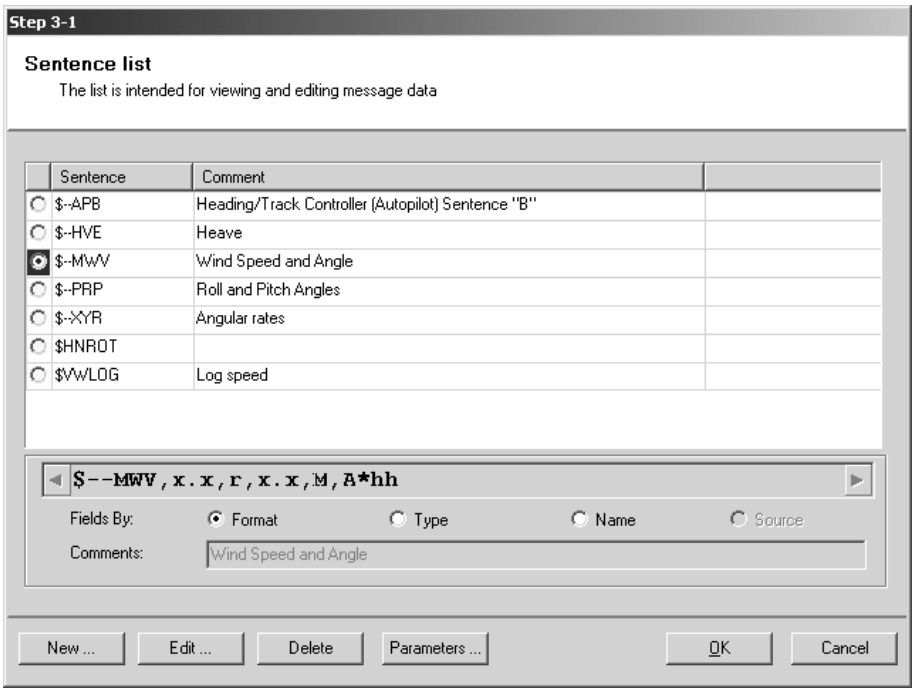
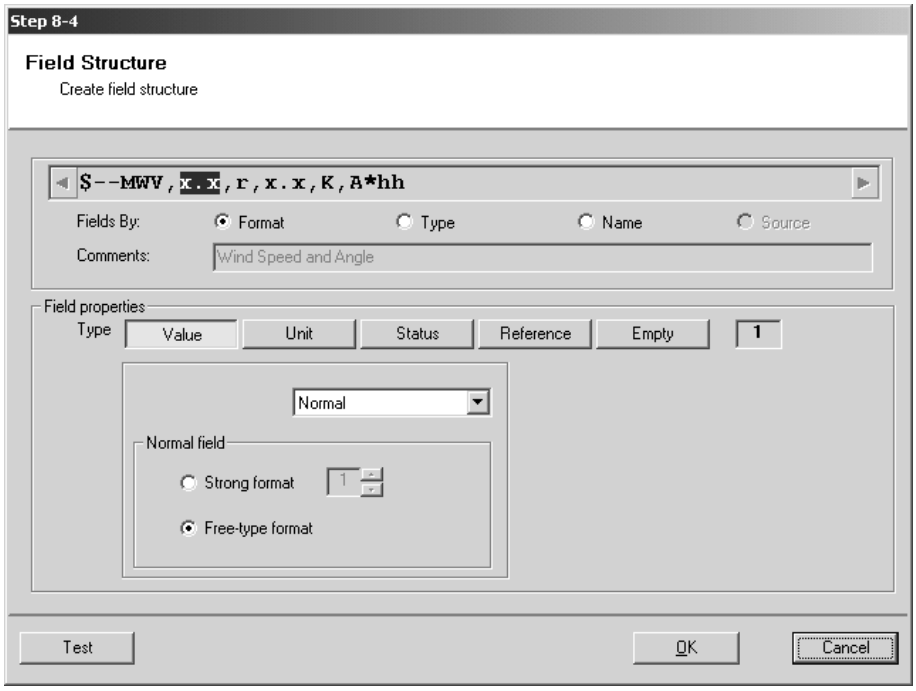
Save
Close

In SENTENCES menu, select EDIT NMEA SENTENCES (CUSTOM) or EDIT OUTPUT SENTENCES option.

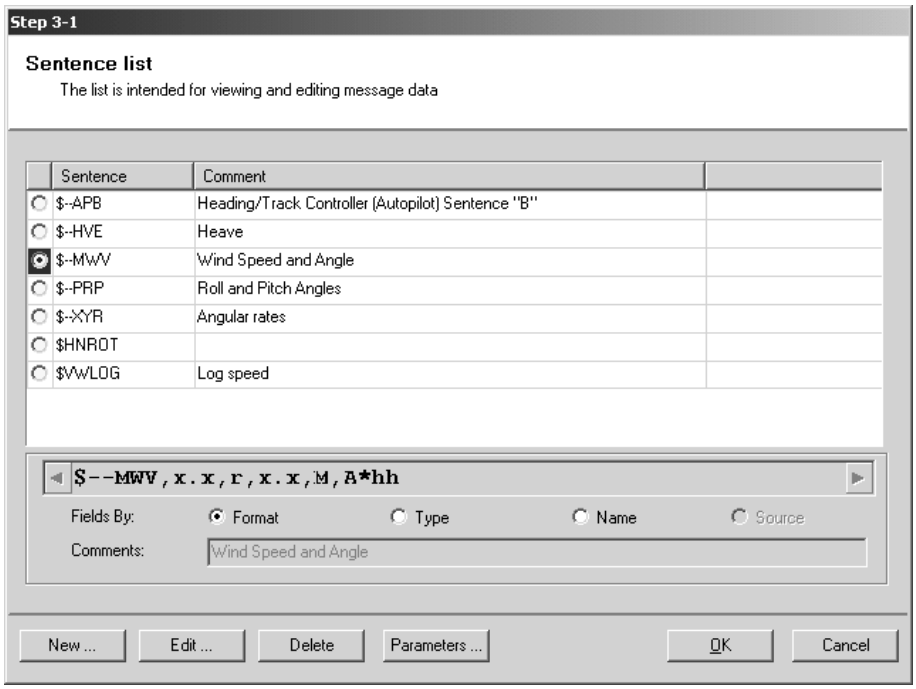


In "Sentence list" window, select a sentence whose structure is required to be edited. Press "Edit" button.



In “Field Structure” window, you can change the order of sentence fields and edit their structure by using “Value”, “Unit”, “Status” or “Reference” buttons. You may leave the field empty as required by pressing “Empty” button.

Press “OK” button.



Set the parameters anew in the edited sentence structure (see the previous paragraph).

Press “OK” button to save the changes you have made and exit to the Sentence Editor of “Navi-Conning 3000 Setup” utility’s Main window.

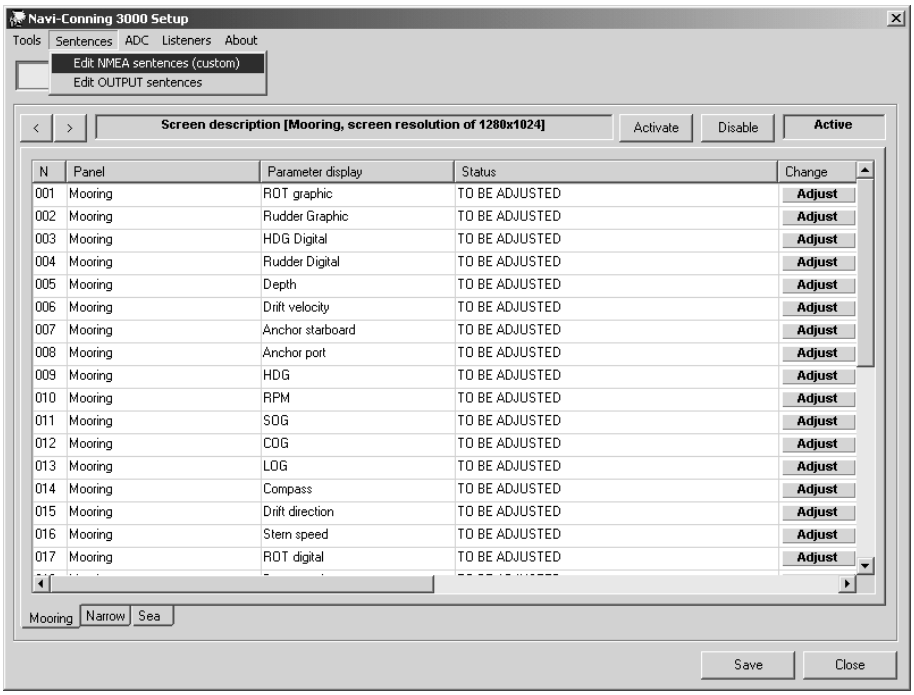
Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

Sentences Deletion

ATTENTION!

Sentences can be deleted from the customized databases only. As this is done, indicator adjustment for the parameters contained in this sentence will be lost.

Open SENTENCES menu of the utility's Main menu.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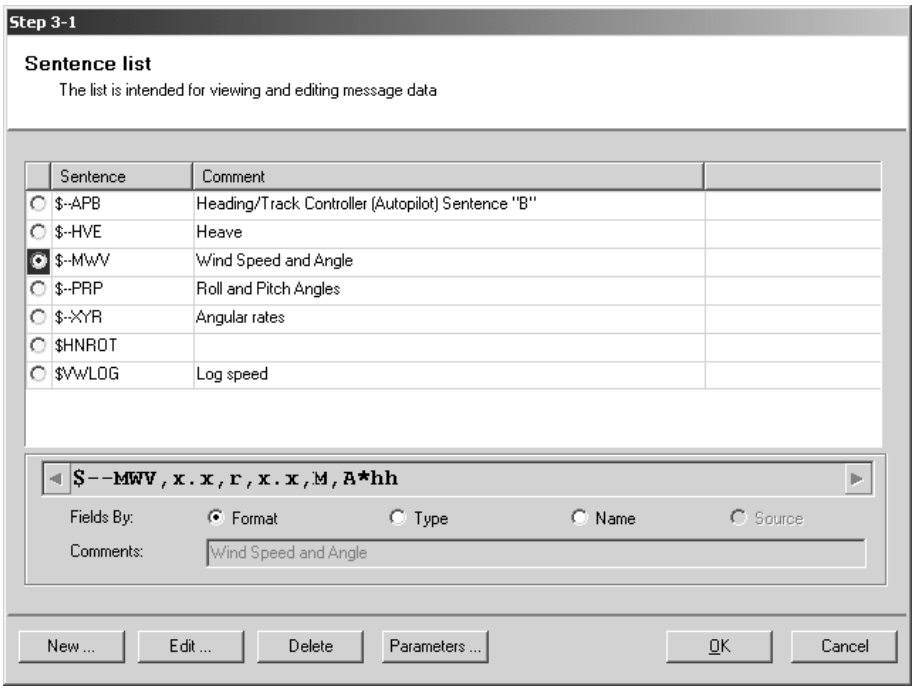
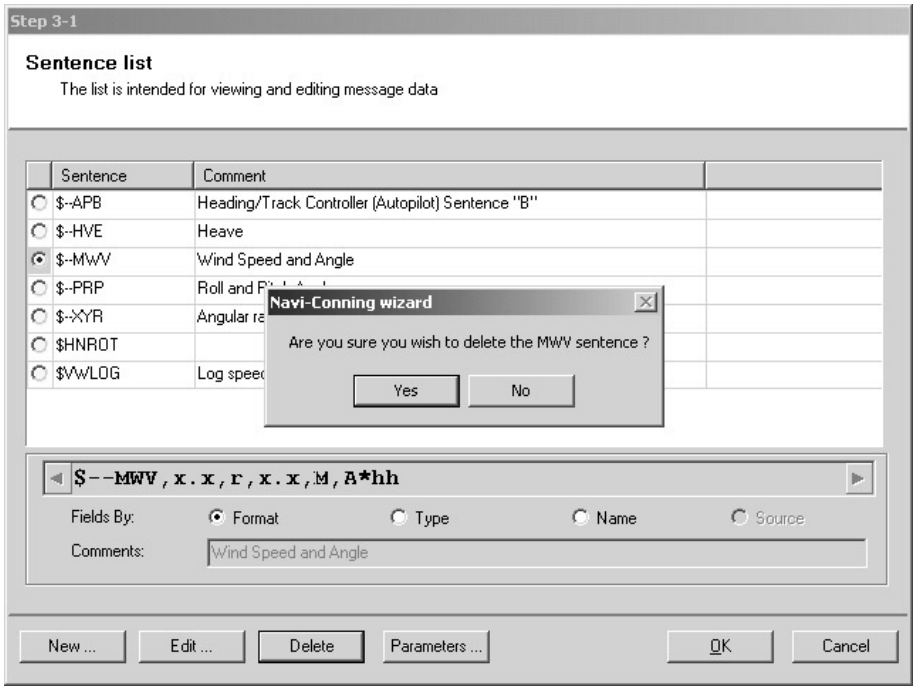
015 Mooring Drift direction TO BE ADJUSTED Adjust
016 Mooring Stern speed TO BE ADJUSTED Adjust
017 Mooring ROT digital TO BE ADJUSTED Adjust
Mooring
Narrow
Sea
Save
Close

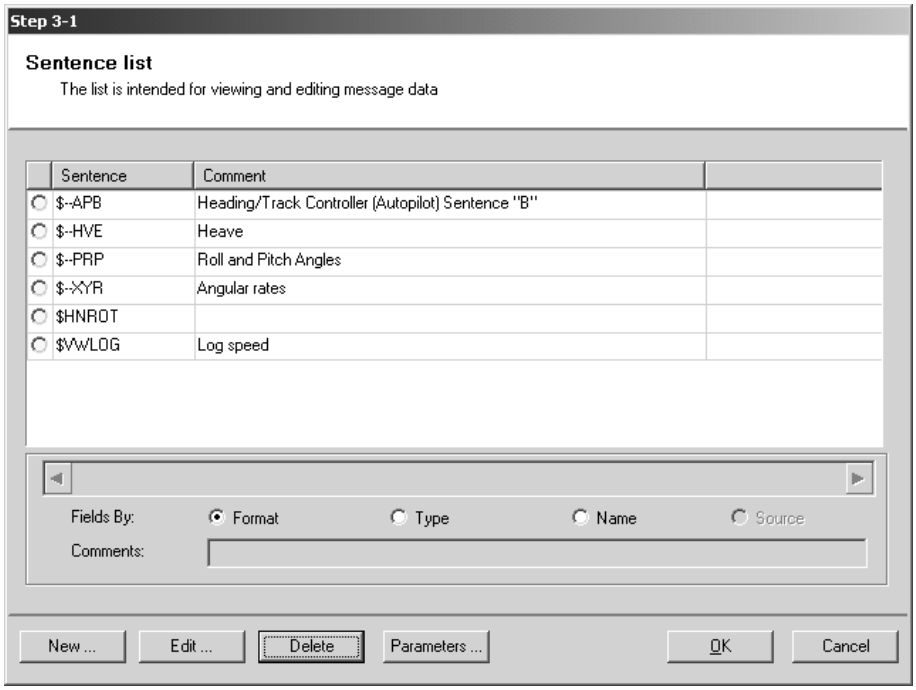
In SENTENCES menu, select EDIT NMEA SENTENCES (CUSTOM) or EDIT OUTPUT SENTENCES option. Select the necessary sentence from the database.



Press <Delete> button in the bottom part of the dialogue box.



Press “Yes” to confirm the deleting of the sentence.



Press “OK” button to save the settings you have made and exit from the Sentence Editor to the Main window of “Navi-Conning 3000 Setup” utility.

Press “Save” button in the Main window of “Navi-Conning 3000 Setup” utility to save the changes you have made.

ANNEX B

OS Installations

This annex describes installation of OS (Windows 2000, Windows NT 4.0) both for Transas dedicated computers and for standard PC's.

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This chapter contains:

Installation of Windows NT 4.0 for Transas Dedicated Computers 237
Installation of Windows NT 4.0 for Standard Personal Computers 238
Installation of Windows NT 4.0 238
Additional COMPORT Board Installation 257
Windows 2000 OS Installation 266
Installation of Windows 2000 266
Additional COMPORT Board Installation 287

INSTALLATION OF WINDOWS NT 4.0 FOR TRANSAS DEDICATED COMPUTERS

NN	RS3
1	Enable CD-ROM driver running the Windows NT from installation disks. Format HDD (disk C:) specifying the NTFS file system (up to 8 Gb)
2	Copy I386 subdirectory from "Windows_NT 4.0 workstation CD" (<*CD-Drive*>*:\I386*) onto hard disk to path *C:\INSTALL\I386* Installation of Windows NT Service Pack 5 should also be copied (*C:\INSTALL\SP5*). Only English version of Windows NT should be used
3	Switch to *C:\INSTALL\I386* directory and execute the following command: `winnt.exe/b/x.` Before starting to install Windows NT disconnect all the navigational equipment from the computer!
4	Leave NTFS file system on the HDD
5	The computer name should be Master. For the network settings with Navi-Sailor/Navi-Conning systems all the computers within the network should be named as follows: Master, Backup, Slave1, Slave2, etc. The names may also be designated in the process of making the network settings
6	For the Administrator user the password should be left empty
7	Select "Most common components" option for installing Windows NT
8	Network installation: select "Do not connect this computer to a network at this time". If the Navi-Conning is intended to be used in a network environments, the network adapter should be installed on your system after Windows NT installation (see item 17 of this table)
9	UTC should be set for the system time, whilst the time zone should be selected in accordance with the intended navigation area
10	Set the video mode. To do this set the maximum screen resolution corresponding to the monitor and video adapter type. The resolution should have one of the following three values: 1280x1024 or 1024x768. Set the number of colours at 256
11	After the restarting run Windows NT Service Pack 5 installation
12	After rebooting the computer, edit C:\boot.ini file. To do this remove read-only attribute from this file. Make the following changes in the file: • Change the Time-out parameter value from 30 to 1 (`Timeout=1`); • At the end of `Multi(0)disk(0)rdisk(0)partition(1)\WINNT="WindowsNTWorkstation Version 4.00"` section `[Operating Systems]` add/`NOSERIALMICE` parameter

13	Use PS/2 port for the mouse (trackerball).
	Parameter should be as follows:
	`[Operating Systems]`
	`multi(0)disk(0)rdisk(0)partition(1)\WINNT="Windows NT Workstation Version 4.00"/NOSERIALMICE`
	The mouse (trackerball) MUST NOT be used on the serial port.
	State again `boot.ini` file as read-only

14	Run *Programs/Administrative tools/User Manager* application: • User/New User. Add a new user with the name of "NS"; • Set the user's full name in the "Navi-Sailor"; • Leave the description field empty; • Set "NS" password to the user; • Set "Password never expires" field (The "User must change password of Next Logon" option should be removed); • Add user "NS" into the "Administrators" group. Run *Programs/Administrative tools/Event Viewer* application: Choose *Log/Log Setting* menu. Choose option "Overwrite events as needed"
15	Restart the system and enter it under the name of "NS"
16	Installation of addition ComPort board. The manual installation of the board should be effected in accordance with the board technical documentation

NN	RS3
17	Installation of the network: • Run *Settings/Control Panel/Network* utility; • Set the computer name in accordance with item 5 of this section; • Set Workgroup parameter in “TRANSAS”; • Set the options (services): Computer Browser; NetBIOS Interface; Server; Workstation; • Select Network Protocols: NW Link IPX/SPX Compatible transport; TCP/IP Protocol; • Select “NW Link IPX/SPX Compatible transport” protocol and press “Properties” button. Set frame type parameter in `Ethernet` 802.3; • Frame Type parameter should be identical for all the stations within the network for NS system; • Select “TCP/IP Protocol” protocol and press “Properties" button. On “IP Address” page select “Specify an IP address” option. Set IP address: 192.168.1.1 (for another station there should be a different parameter, e.g. 192.168.1.2). Set Subnet Mask: 255.255.255.0 (this parameter should be the same for all stations). Leave Default Gateway field empty; • Restart the system
18	Re-start the computer and start Windows NT Service Pack 5 installation
19	Save all the drivers used during the installation procedure on the HDD (*C:\INSTALL\DRIVERS\VIDEO, C:\INSTALL\DRIVERS\NET, C:\INSTALL\DRIVERS\CD, C:\INSTALL\DRIVERS\SOUND, C:\INSTALL\DRIVERS\DIGI*)

INSTALLATION OF WINDOWS NT 4.0 FOR STANDARD PERSONAL COMPUTERS

Installation of Windows NT 4.0

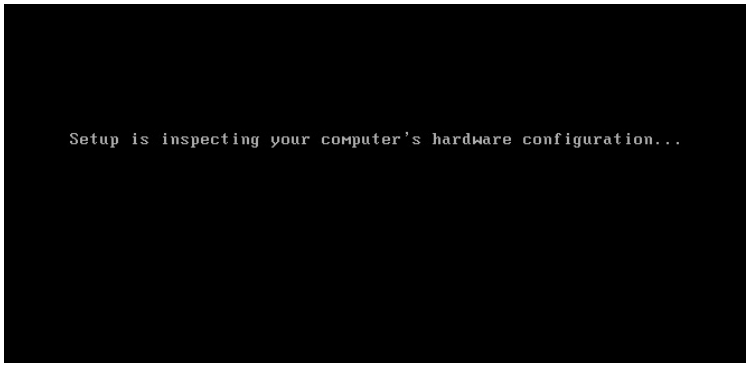
WARNING!

Before starting to install Windows NT disconnect all the navigational equipment from the computer.

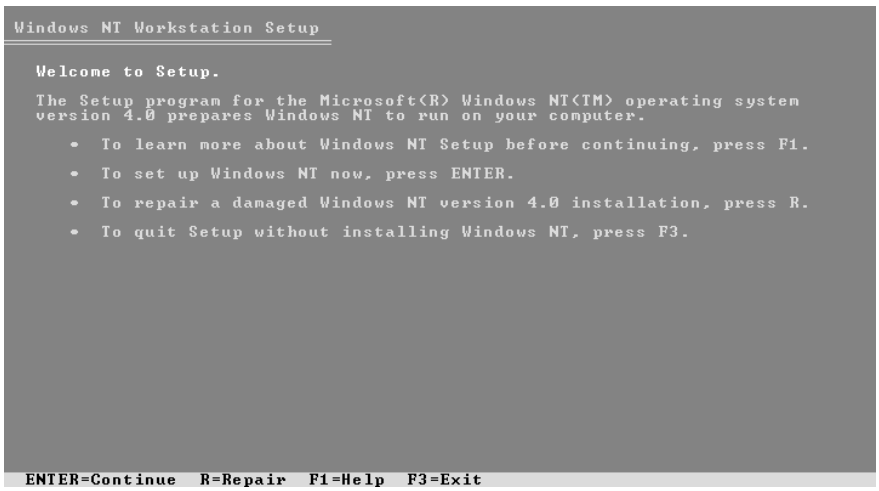
PC should meet all the points listed in the Requirements to Non-Transas Hardware.

Enable in BIOS opportunity of boot loading from CD-ROM.

Start WINDOWS NT installation.



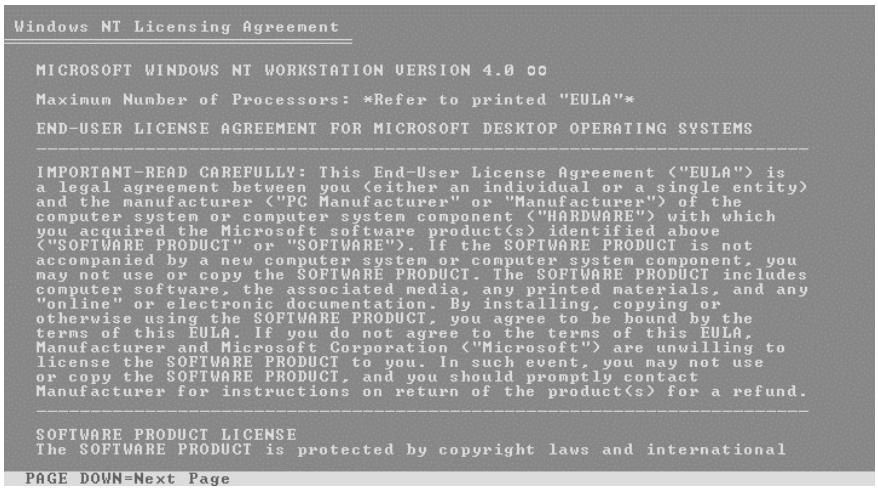
Press <Enter> button.


Windows NT Workstation Setup
Welcome to Setup.
The Setup program for the Microsoft(R) Windows NT(TM) operating system version 4.0 prepares Windows NT to run on your computer.
• To learn more about Windows NT Setup before continuing, press F1.
• To set up Windows NT now, press ENTER.
• To repair a damaged Windows NT version 4.0 installation, press R.
• To quit Setup without installing Windows NT, press F3.
ENTER=Continue R=Repair F1=Help F3=Exit

Press <Enter> button.

Windows NT Workstation Setup
Setup has recognized the following mass storage devices in your computer:
IDE CD-ROM (ATAPI 1.2)/PCI IDE Controller
• To specify additional SCSI adapters, CD-ROM drives, or special disk controllers for use with Windows NT, including those for which you have a device support disk from a mass storage device manufacturer, press S.
• If you do not have any device support disks from a mass storage device manufacturer, or do not want to specify additional mass storage devices for use with Windows NT, press ENTER.
S=Specify Additional Device ENTER=Continue F3=Exit

Press <Page Down> button sequentially.


Windows NT Licensing Agreement
MICROSOFT WINDOWS NT WORKSTATION VERSION 4.0 oo
Maximum Number of Processors: *Refer to printed "EULA"*
END-USER LICENSE AGREEMENT FOR MICROSOFT DESKTOP OPERATING SYSTEMS
IMPORTANT-READ CAREFULLY: This End-User License Agreement ("EULA") is a legal agreement between you (either an individual or a single entity) and the manufacturer ("PC Manufacturer" or "Manufacturer") of the computer system or computer system component ("HARDWARE") with which you acquired the Microsoft software product(s) identified above ("SOFTWARE PRODUCT" or "SOFTWARE"). If the SOFTWARE PRODUCT is not accompanied by a new computer system or computer system component, you may not use or copy the SOFTWARE PRODUCT. The SOFTWARE PRODUCT includes computer software, the associated media, any printed materials, and any "online" or electronic documentation. By installing, copying or otherwise using the SOFTWARE PRODUCT, you agree to be bound by the terms of this EULA. If you do not agree to the terms of this EULA, Manufacturer and Microsoft Corporation ("Microsoft") are unwilling to license the SOFTWARE PRODUCT to you. In such event, you may not use or copy the SOFTWARE PRODUCT, and you should promptly contact Manufacturer for instructions on return of the product(s) for a refund.
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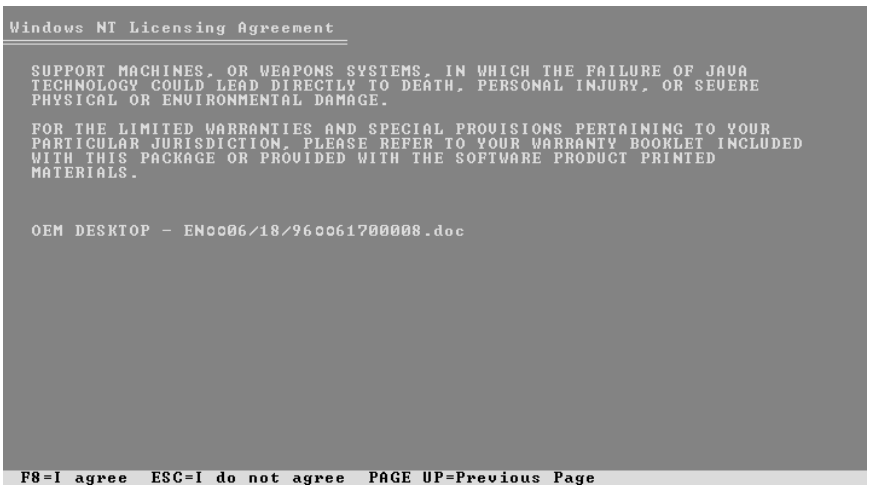
PAGE DOWN=Next Page

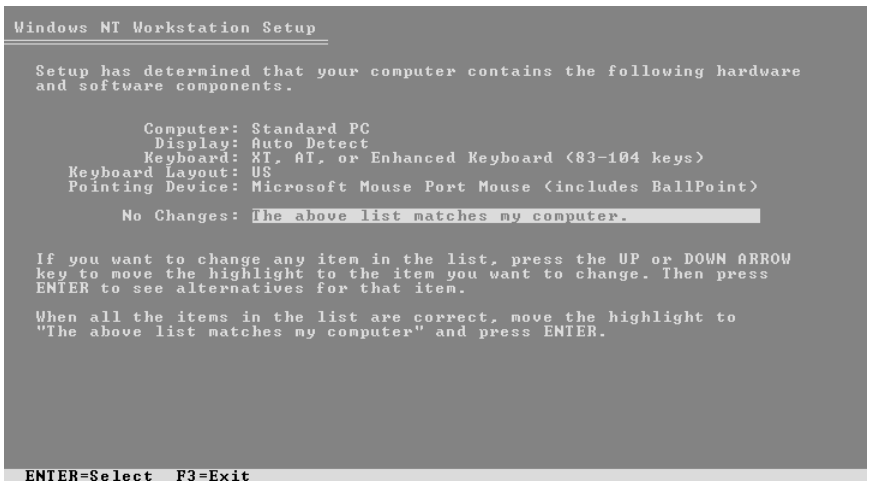
Press <F8> button.


Windows NT Licensing Agreement
SUPPORT MACHINES, OR WEAPONS SYSTEMS, IN WHICH THE FAILURE OF JAVA TECHNOLOGY COULD LEAD DIRECTLY TO DEATH, PERSONAL INJURY, OR SEVERE PHYSICAL OR ENVIRONMENTAL DAMAGE.
FOR THE LIMITED WARRANTIES AND SPECIAL PROVISIONS PERTAINING TO YOUR PARTICULAR JURISDICTION, PLEASE REFER TO YOUR WARRANTY BOOKLET INCLUDED WITH THIS PACKAGE OR PROVIDED WITH THE SOFTWARE PRODUCT PRINTED MATERIALS.
OEM DESKTOP - EN0006/18/9600617000008.doc
F8=I agree ESC=I do not agree PAGE UP=Previous Page

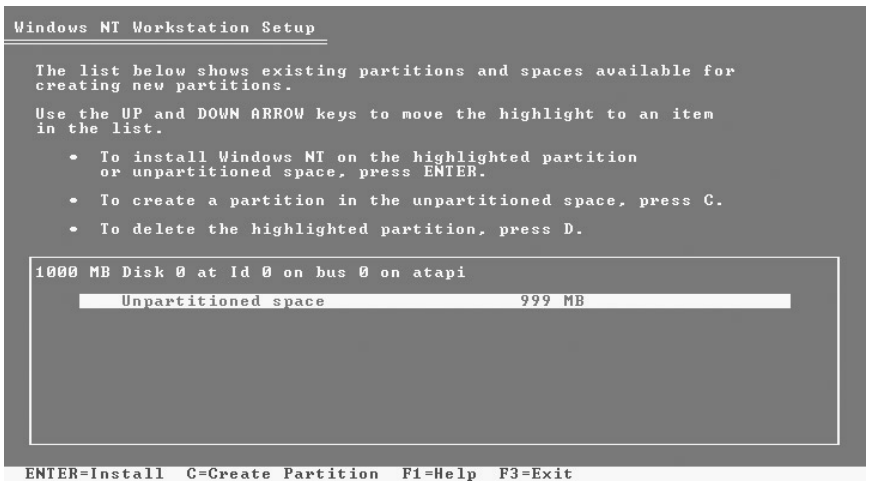
WARNING!

In case of the OS re-installation, do not select “Upgrade Windows NT” option.

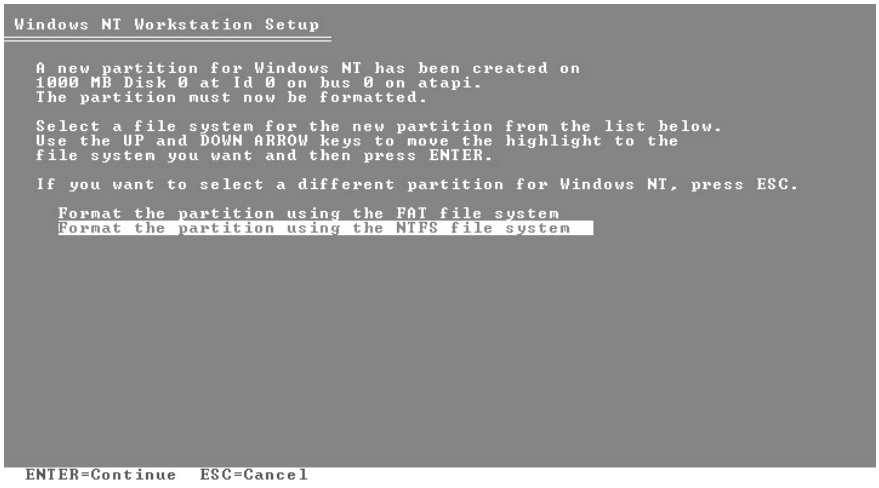
Press <Enter> button.


Windows NT Workstation Setup
Setup has determined that your computer contains the following hardware and software components.
Computer: Standard PC
Display: Auto Detect
Keyboard: XT, AT, or Enhanced Keyboard (83-104 keys)
Keyboard Layout: US
Pointing Device: Microsoft Mouse Port Mouse (includes BallPoint)
No Changes: The above list matches my computer.
If you want to change any item in the list, press the UP or DOWN ARROW key to move the highlight to the item you want to change. Then press ENTER to see alternatives for that item.
When all the items in the list are correct, move the highlight to "The above list matches my computer" and press ENTER.
ENTER=Select F3=Exit

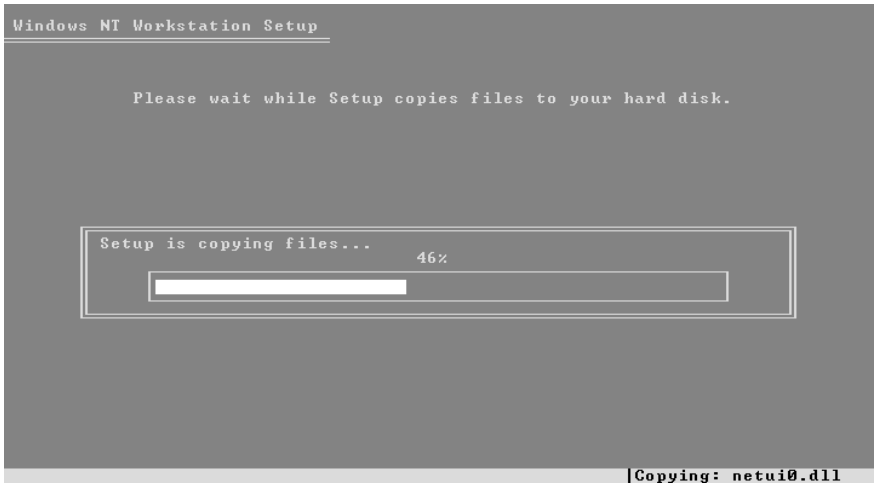
Press <Enter> button.


Windows NT Workstation Setup
The list below shows existing partitions and spaces available for creating new partitions.
Use the UP and DOWN ARROW keys to move the highlight to an item in the list.
• To install Windows NT on the highlighted partition or unpartitioned space, press ENTER.
• To create a partition in the unpartitioned space, press C.
• To delete the highlighted partition, press D.
1000 MB Disk 0 at Id 0 on bus 0 on atapi
Unpartitioned space 999 MB
ENTER=Install C=Create Partition F1=Help F3=Exit

Select `Format the partition using the NTFS file system`.

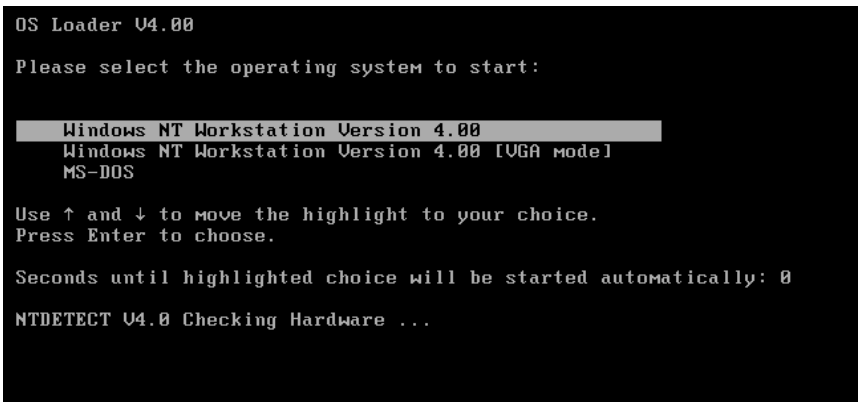

Windows NT Workstation Setup
A new partition for Windows NT has been created on
1000 MB Disk 0 at Id 0 on bus 0 on atapi.
The partition must now be formatted.
Select a file system for the new partition from the list below.
Use the UP and DOWN ARROW keys to move the highlight to the
file system you want and then press ENTER.
If you want to select a different partition for Windows NT, press ESC.
Format the partition using the FAT file system
Format the partition using the NTFS file system
ENTER=Continue ESC=Cancel

Press <Enter> button.

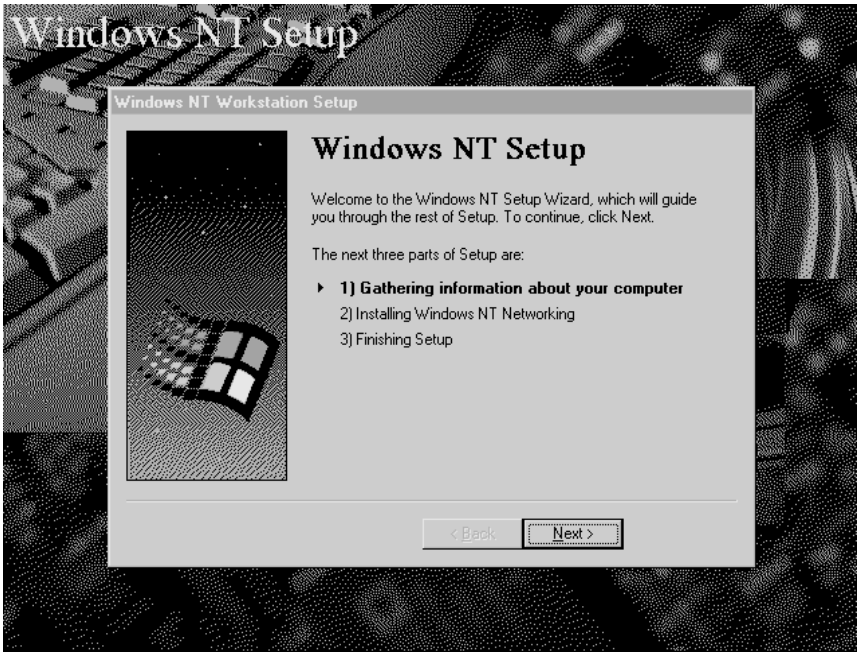

Windows NT Workstation Setup
Please wait while Setup copies files to your hard disk.
Setup is copying files...
46%
Copying: netui0.dll

Remove CD from CD drive. Press <Enter> button.

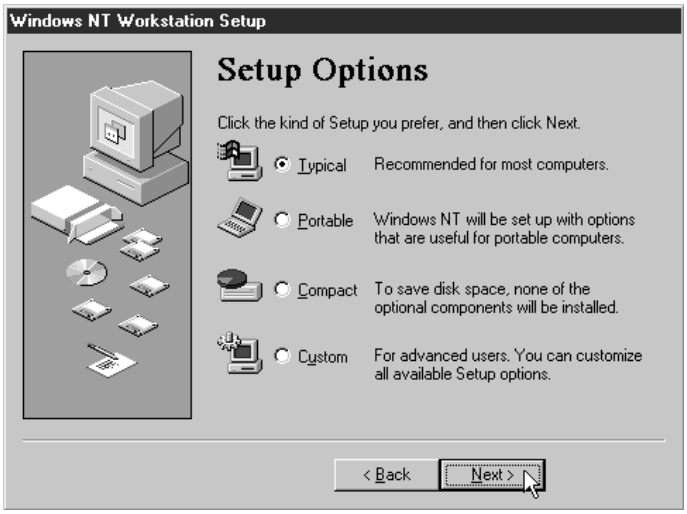
Windows NT Workstation Setup
This portion of Setup has completed successfully.
If there is a floppy disk inserted in drive A:, remove it.
Also remove any compact discs from your CD-ROM drive(s).
Press ENTER to restart your computer.
When your computer restarts, Setup will continue.
ENTER=Restart Computer


OS Loader V4.00
Please select the operating system to start:
Windows NT Workstation Version 4.00
Windows NT Workstation Version 4.00 [VGA mode]
MS-DOS
Use ↑ and ↓ to move the highlight to your choice.
Press Enter to choose.
Seconds until highlighted choice will be started automatically: 0
NTDETECT V4.0 Checking Hardware ...

Click “Next” button.


Windows NT Setup
Windows NT Workstation Setup
Windows NT Setup
Welcome to the Windows NT Setup Wizard, which will guide you through the rest of Setup. To continue, click Next.
The next three parts of Setup are:
1) Gathering information about your computer
2) Installing Windows NT Networking
3) Finishing Setup
< Back
Next >

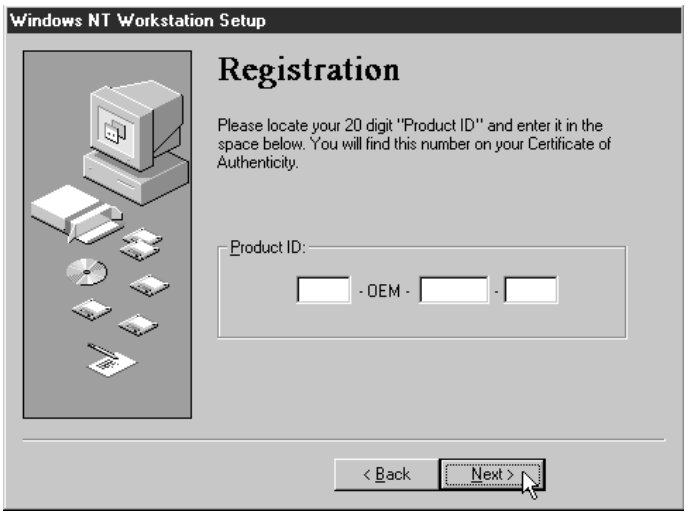
Click “Next” button.


Windows NT Workstation Setup
Setup Options
Click the kind of Setup you prefer, and then click Next.
Typical
Recommended for most computers.
Portable
Windows NT will be set up with options that are useful for portable computers.
Compact
To save disk space, none of the optional components will be installed.
Custom
For advanced users. You can customize all available Setup options.
< Back
Next >

Enter Windows NT owner name and his company. Click “Next” button.

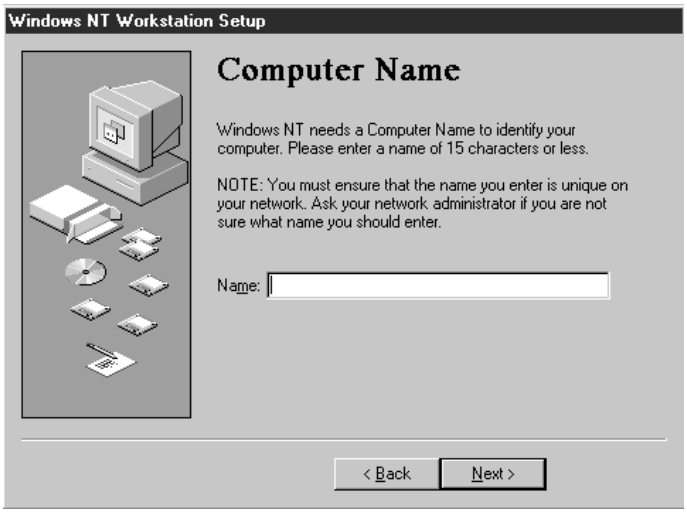
Windows NT Workstation Setup
Name and Organization
Please type your full name in the box below. You may also specify the name of your company or organization if you wish.
The information you enter will be used to personalize your installation of Windows NT.
Name:
Organization:
< Back
Next >

Enter Product ID – OS registration number. Click “Next” button.


Windows NT Workstation Setup
Registration
Please locate your 20 digit "Product ID" and enter it in the space below. You will find this number on your Certificate of Authenticity.
Product ID:
- OEM -
< Back
Next >

Enter the computer name – MASTER. For networked with Navi-Sailor/Navi-Conning system all the computers in the network should be named next way – MASTER, BACKUP, SLAVE1, SLAVE2 etc. in accordance with computer administration in a network.

Click “Next” button.


Windows NT Workstation Setup
Computer Name
Windows NT needs a Computer Name to identify your computer. Please enter a name of 15 characters or less.
NOTE: You must ensure that the name you enter is unique on your network. Ask your network administrator if you are not sure what name you should enter.
Name:
< Back
Next >

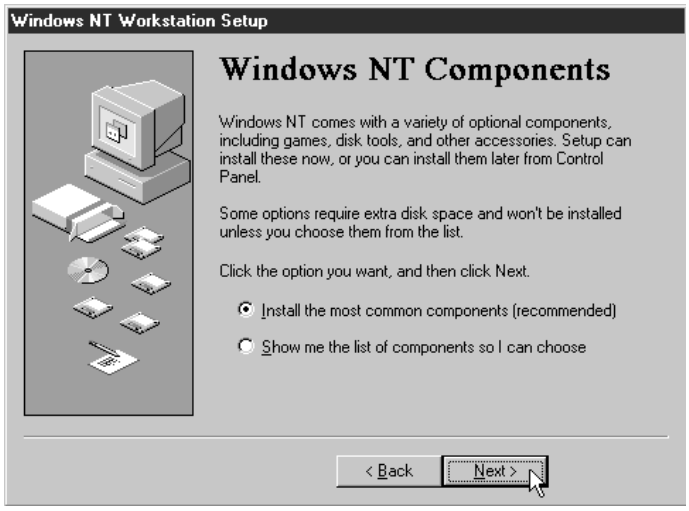
For user with Administrator account password should stay empty. Click “Next” button.

Windows NT Workstation Setup
Administrator Account
Please enter a password of 14 characters or less to use for the Administrator account. Reenter the same password in the Confirm Password field.
The Administrator account allows maximum access to your computer's resources. Therefore the administrator password is an important piece of information which you should guard carefully.
Note: Take special care to remember the password you supply. It is recommended that you write the password down and store it in a safe place.
Password:
Confirm Password:
< Back
Next >

Select “No, do not create an emergency repair disk” option. Click “Next” button.

Windows NT Workstation Setup
Emergency Repair Disk
Setup can create an emergency repair disk, which is a floppy disk that can be used later to repair Windows NT should it become damaged. (In some cases Windows NT can be repaired without an emergency repair disk.)
Note: you can create an emergency repair disk at any time by using the RDISK utility. Would you like to create a repair disk during setup?
Yes, create an emergency repair disk (recommended).
No, do not create an emergency repair disk.
< Back
Next >

Select “Install the most common components (recommended)” option. Click “Next” button.


Windows NT Workstation Setup
Windows NT Components
Windows NT comes with a variety of optional components, including games, disk tools, and other accessories. Setup can install these now, or you can install them later from Control Panel.
Some options require extra disk space and won't be installed unless you choose them from the list.
Click the option you want, and then click Next.
Install the most common components (recommended)
Show me the list of components so I can choose
< Back
Next >

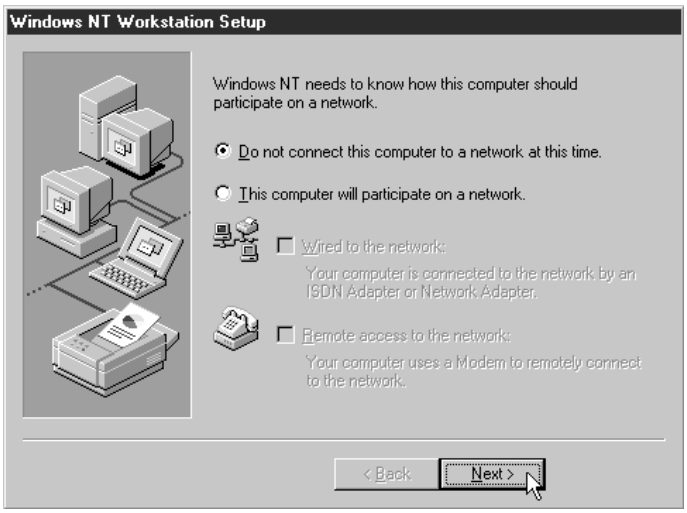
Click “Next” button.

Windows NT Workstation Setup
Windows NT Setup
Setup is now ready to guide you through installation of Windows NT Networking. If you want to review or change any settings before continuing, click Back.
To begin installing Windows NT Networking, click Next.
1) Gathering information about your computer
2) Installing Windows NT Networking
3) Finishing Setup
< Back
Next >

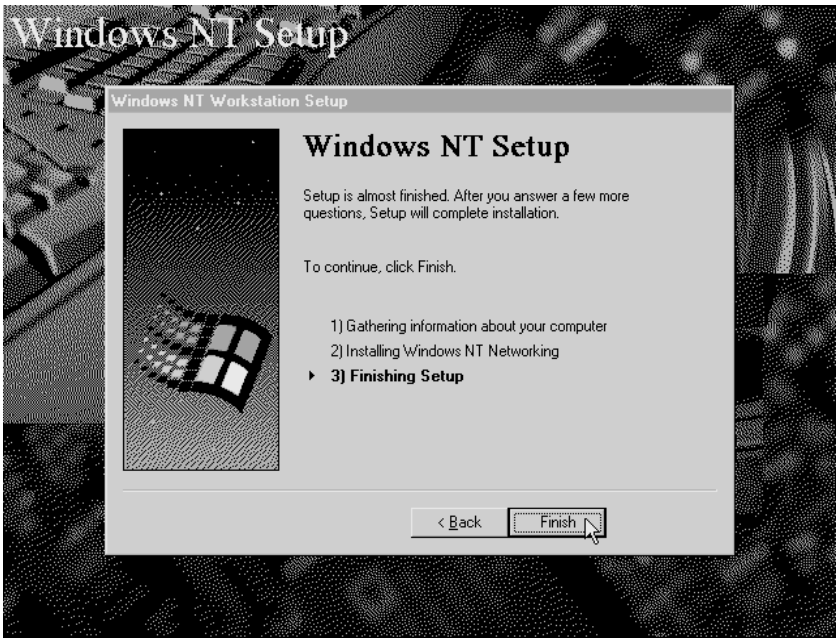
WARNING!

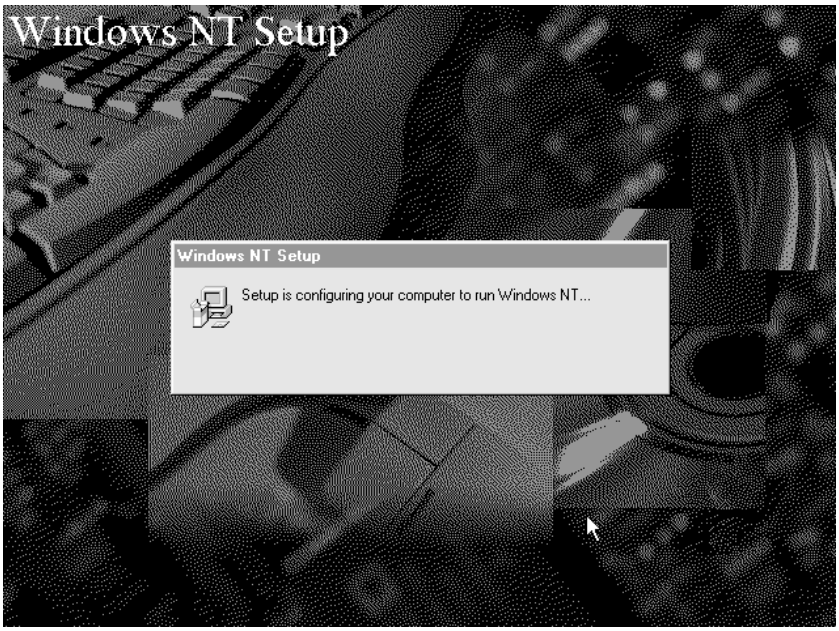
If the Navi-Conning is intended to be used in network environments, the network adapter should be installed on your systems after Windows NT installation.

Select “Do not connect this computer to a network at this time” option. Click “Next” button.

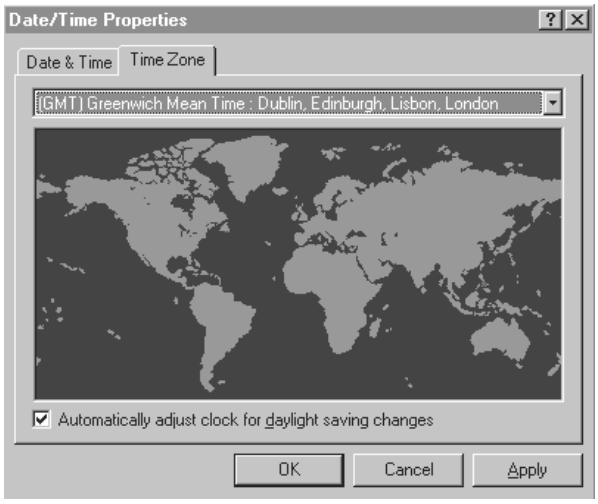

Windows NT Workstation Setup
Windows NT needs to know how this computer should participate on a network.
Do not connect this computer to a network at this time.
This computer will participate on a network.
Wired to the network:
Your computer is connected to the network by an ISDN Adapter or Network Adapter.
Remote access to the network:
Your computer uses a Modem to remotely connect to the network.
< Back
Next >

Click “Finish” button.

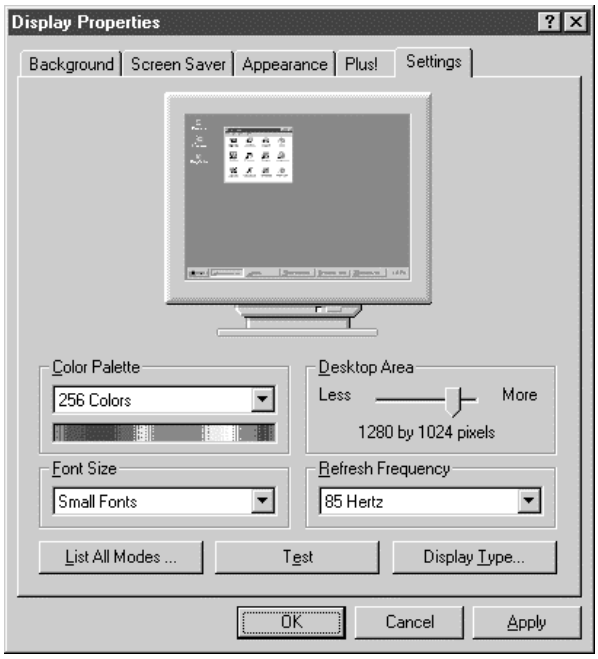

Windows NT Setup
Windows NT Workstation Setup
Windows NT Setup
Setup is almost finished. After you answer a few more questions, Setup will complete installation.
To continue, click Finish.
1) Gathering information about your computer
2) Installing Windows NT Networking
3) Finishing Setup
< Back
Finish



System time should be set as UTC. Time Zone should be set in accordance with intended sailing area. Click “OK” button.

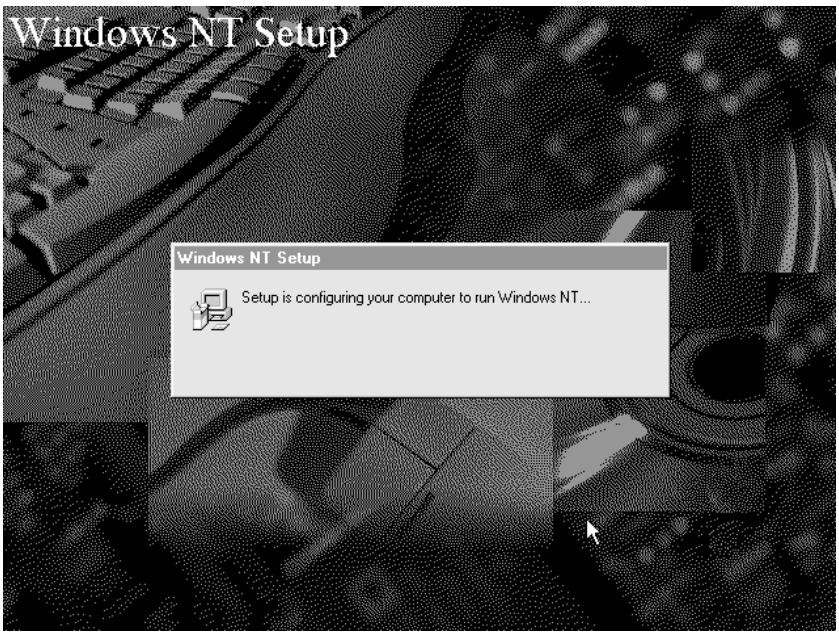


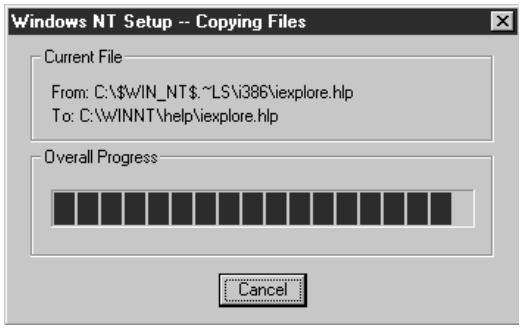
Click “OK” button.



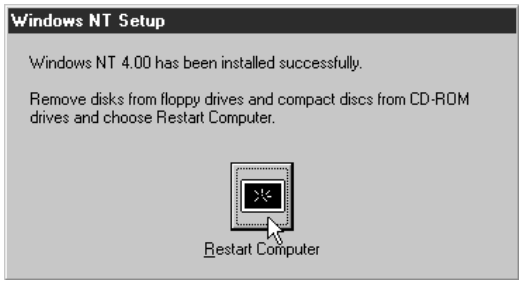
WARNING!

The display settings can be changed after Windows NT Setup is complete.

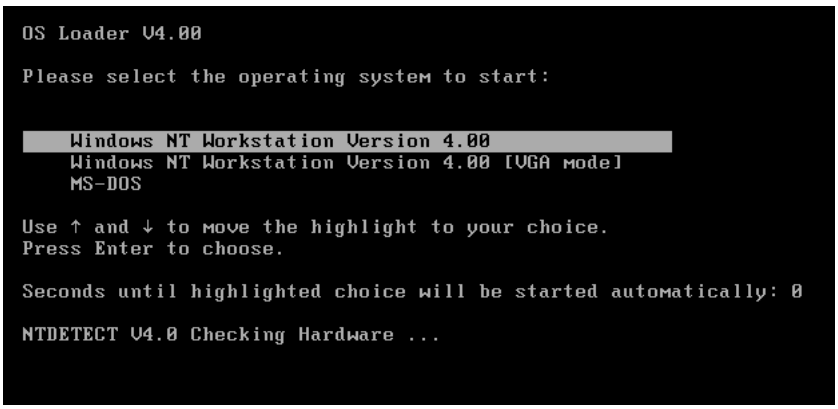




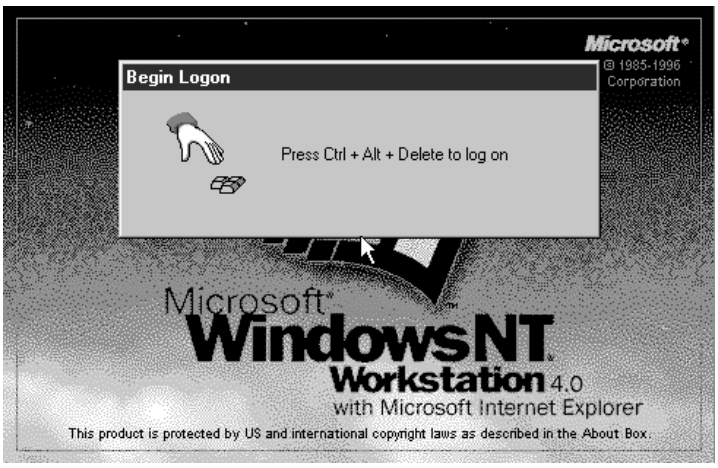
Click “Restart Computer” button.


Windows NT Setup
Windows NT 4.00 has been installed successfully.
Remove disks from floppy drives and compact discs from CD-ROM drives and choose Restart Computer.
Restart Computer

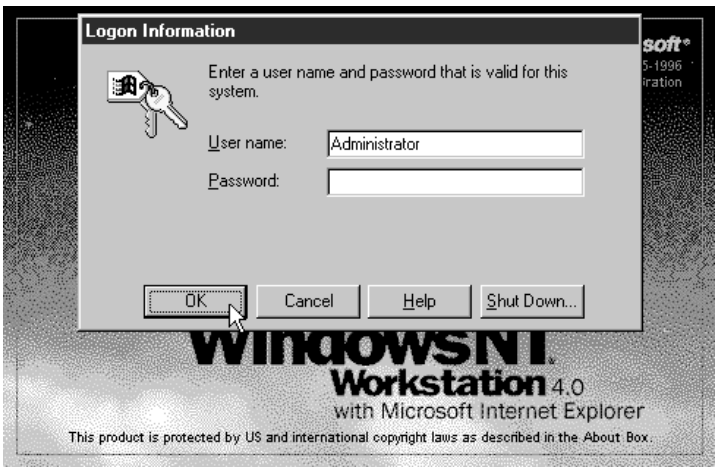
Select “Windows NT Workstation Version 4.00” string. Press <Enter> button.


OS Loader V4.00
Please select the operating system to start:
Windows NT Workstation Version 4.00
Windows NT Workstation Version 4.00 [VGA mode]
MS-DOS
Use ↑ and ↓ to move the highlight to your choice.
Press Enter to choose.
Seconds until highlighted choice will be started automatically: 0
NTDETECT V4.0 Checking Hardware ...

Press <Ctrl>+<Alt>+<Delete> to log on.

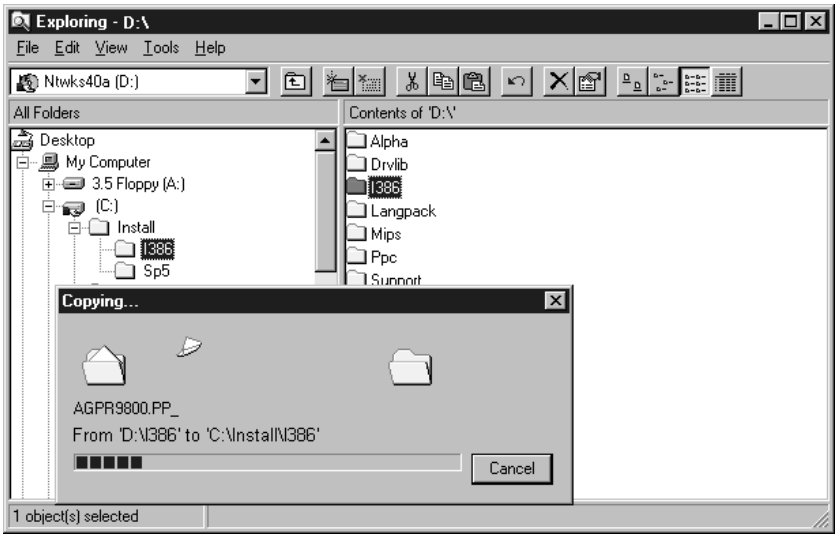

Microsoft
© 1985-1996
Corporation
Begin Logon
Press Ctrl + Alt + Delete to log on
Microsoft
Windows NT
Workstation 4.0
with Microsoft Internet Explorer
This product is protected by US and international copyright laws as described in the About Box.

Click “OK” button.

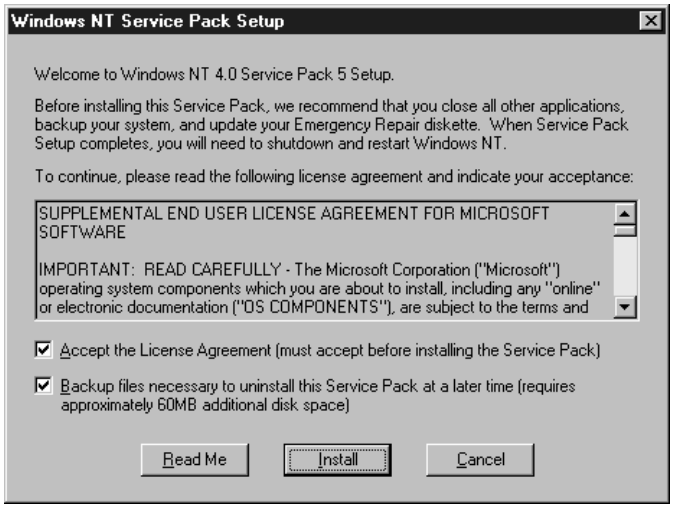


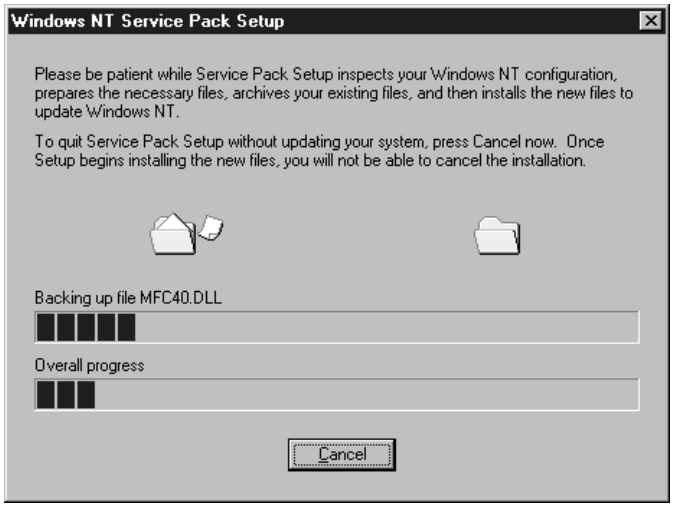
Click “Close” button.

Copy I386 subdirectory from “Windows NT workstation CD” (<*CD-drive*>*\I386*) onto hard disk to path *C:\INSTALL\I386*. Installation of Windows NT Service Pack 5 should be copied as well (*C:\INSTALL\SP5*).



Run Windows NT Service Pack 5 installation.


Windows NT Service Pack Setup
Welcome to Windows NT 4.0 Service Pack 5 Setup.
Before installing this Service Pack, we recommend that you close all other applications, backup your system, and update your Emergency Repair diskette. When Service Pack Setup completes, you will need to shutdown and restart Windows NT.
To continue, please read the following license agreement and indicate your acceptance:
SUPPLEMENTAL END USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE
IMPORTANT: READ CAREFULLY - The Microsoft Corporation ("Microsoft") operating system components which you are about to install, including any "online" or electronic documentation ("OS COMPONENTS"), are subject to the terms and
Accept the License Agreement (must accept before installing the Service Pack)
Backup files necessary to uninstall this Service Pack at a later time (requires approximately 60MB additional disk space)
Read Me
Install
Cancel

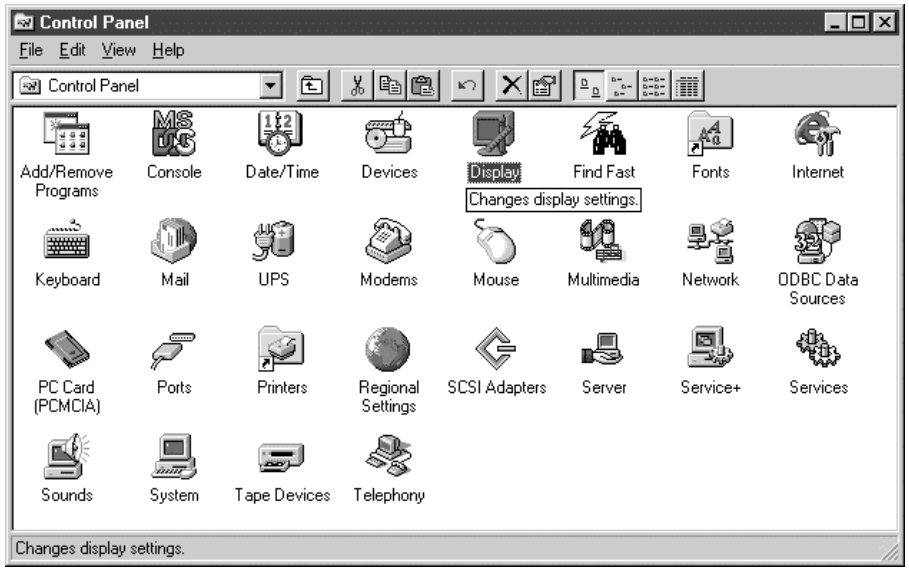

Windows NT Service Pack Setup
Please be patient while Service Pack Setup inspects your Windows NT configuration, prepares the necessary files, archives your existing files, and then installs the new files to update Windows NT.
To quit Service Pack Setup without updating your system, press Cancel now. Once Setup begins installing the new files, you will not be able to cancel the installation.
Backing up file MFC40.DLL
Overall progress
Cancel

Click “Restart” button.

Windows NT Service Pack Setup
Windows NT 4.0 Service Pack 5 installation is complete. You must restart your computer for the Service Pack update to take effect.
If you install any additional Windows NT components from the original Windows NT CD, you should then reinstall Service Pack 5 to ensure the new components are updated.
Restart

Run *Start\Settings\Control Panel*.

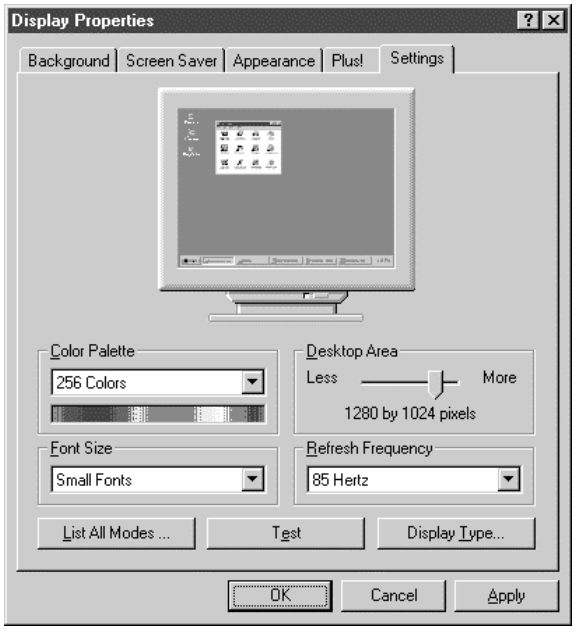
Double-click “Display” icon.



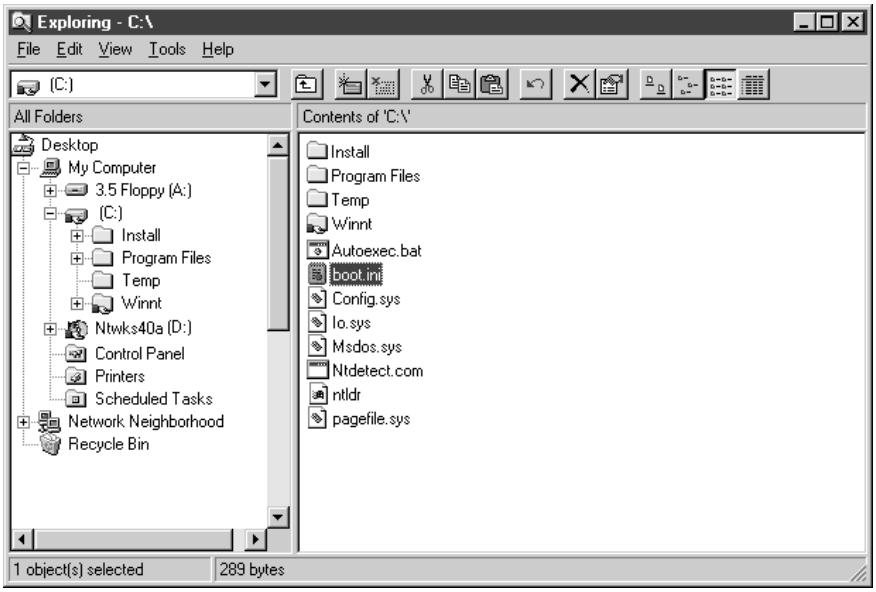
Set the video mode. Color Palette min 65536 Colors.

The resolution should have one of the following values: 1280x1024 or 1024x768.

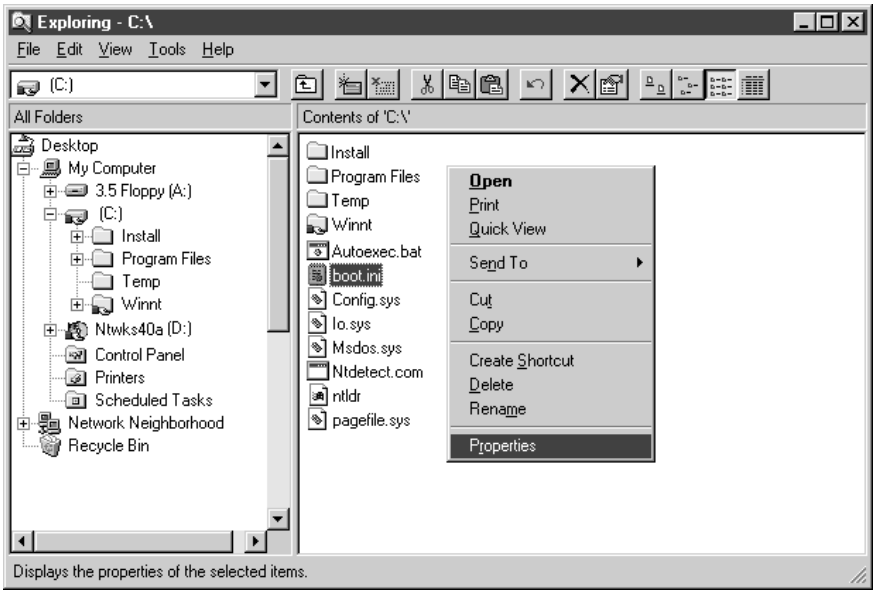
Click “OK” button.



Run *Start\Settings\Programs\Windows NT Explorer*.



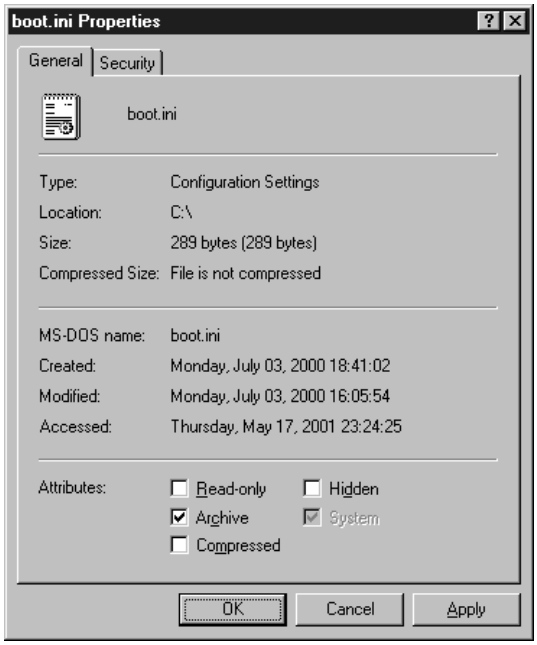
Click right mouse button with the cursor located on the `boot.ini` file.



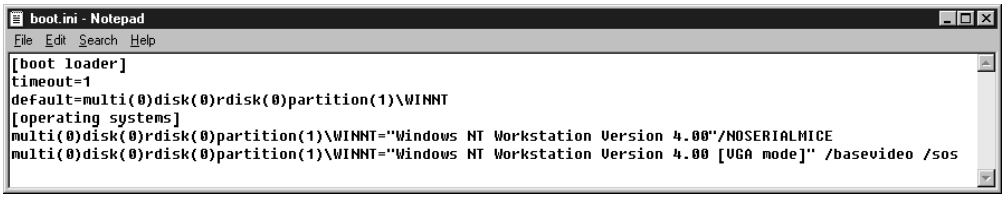
Select “Properties” option.

Switch off “Read-only” attribute.

Click “OK” button.



Edit `boot.ini` file as follows:



Set `TIMEOUT=1`.

In Operating Systems section at the end of text line add/`NOSERIALMICE` parameter.

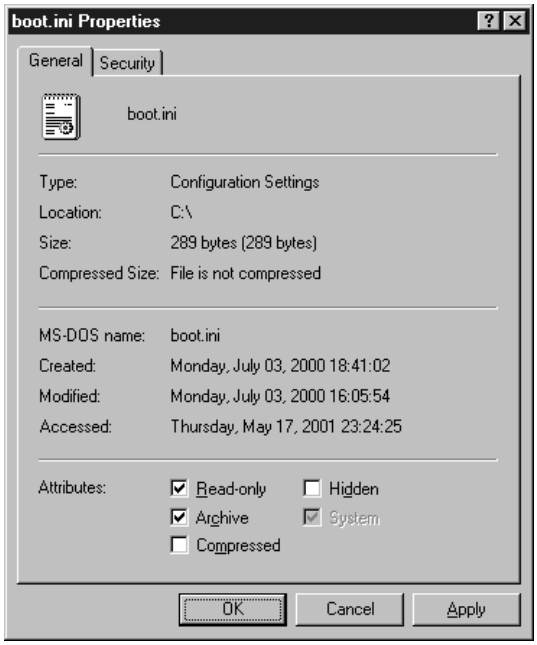
WARNING!

If a mouse (trackerball) is connected to the serial port (e.g. COM2), the above mentioned parameters should be as follows:

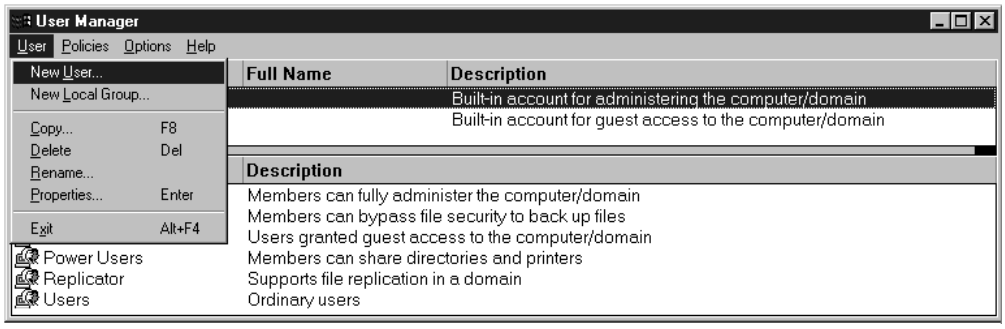
```
[Operating Systems]
multi(0)disk(0)rdisk(0)partition(1)\WINNT=“Windows NT
Workstation Version 4.00”/NOSERIALMISE=COM1,COM3,COM4.
```

Switch ON “Read-only” attribute.

Click “OK” button.



Run *Start\Programs\Administrative Tools (Common)\User Manager*.



Click *User\New User* in the menu.

Username – NS.

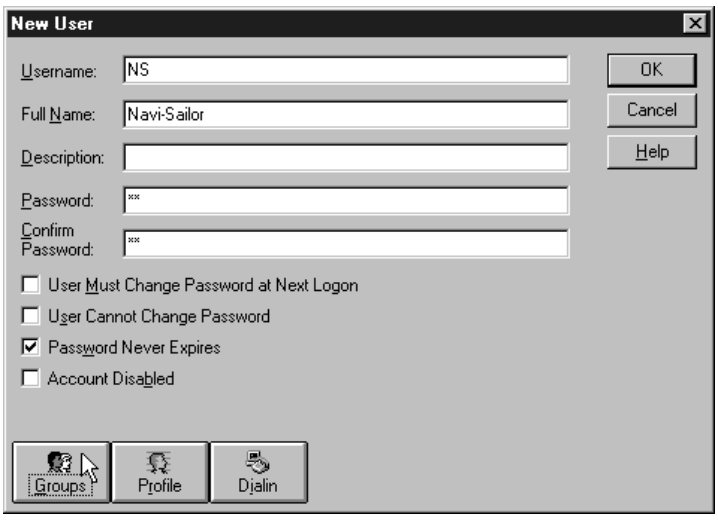
Full name – Navi-Sailor.

Password – NS.

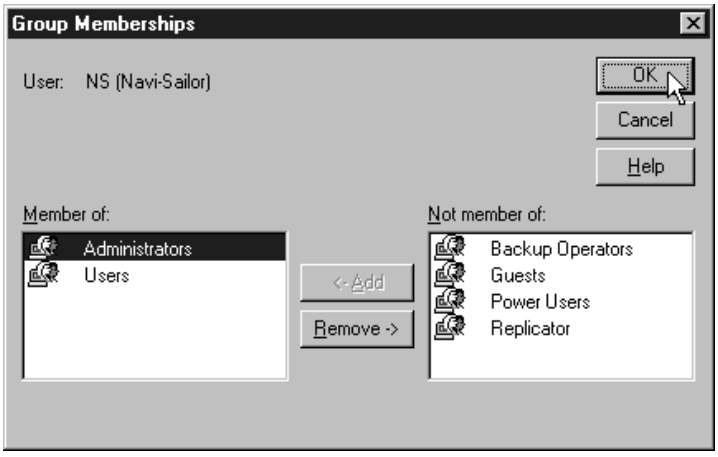
Select “Password Never Expires” option.

Switch off “User Must Change Password as Next Logon” option.

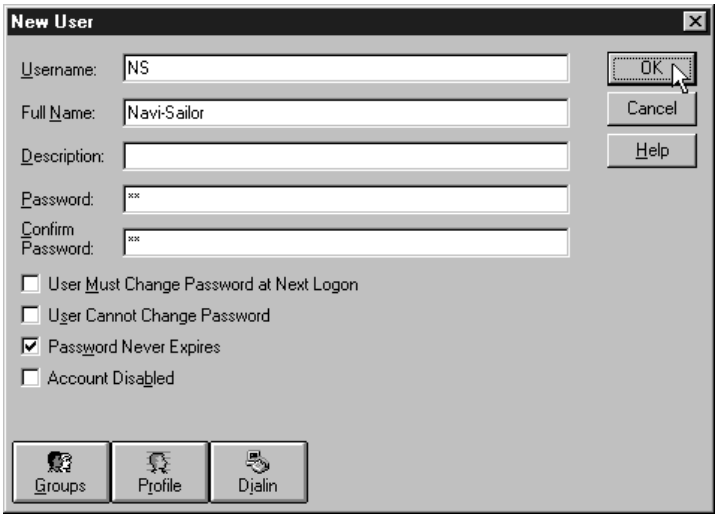
Click “Groups” button.

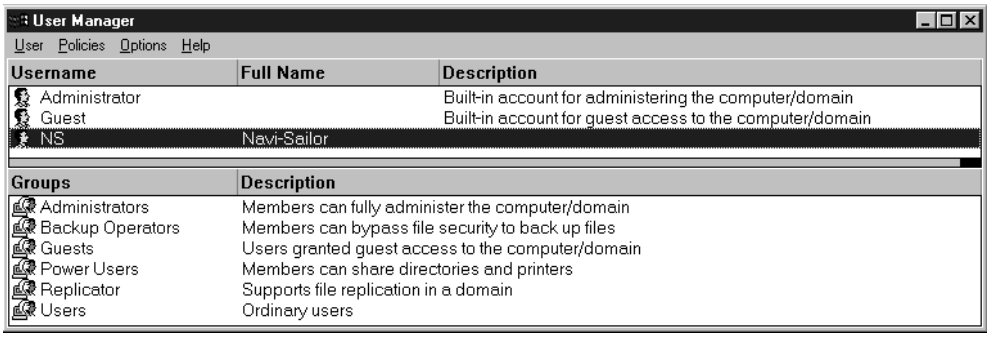


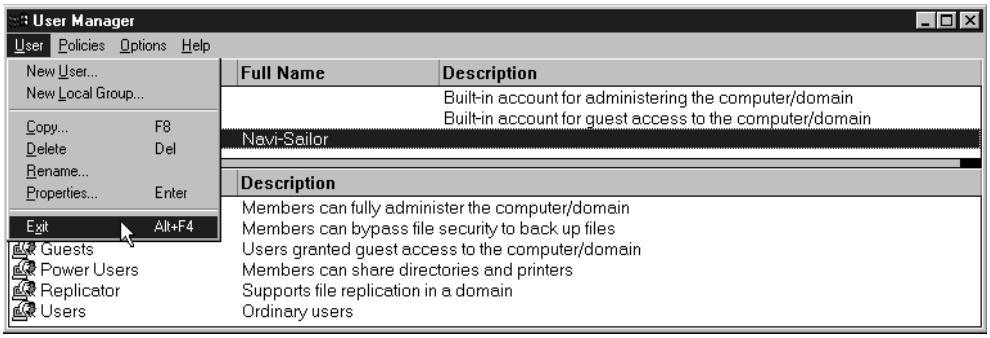
Add Administrators group. Click “OK” button.



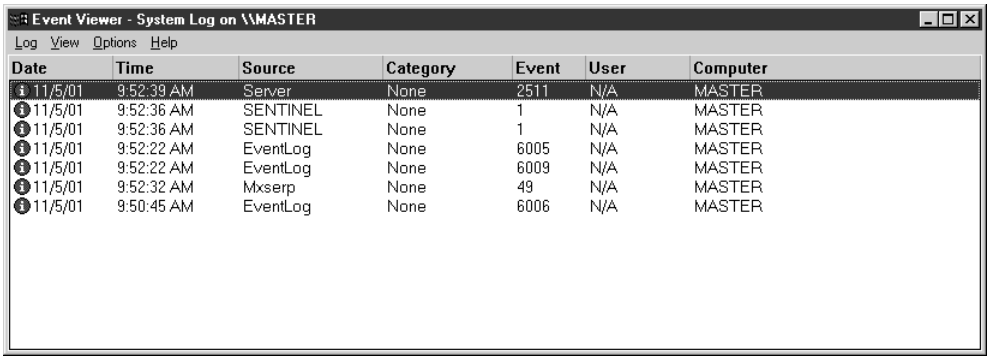
Click “OK” button.



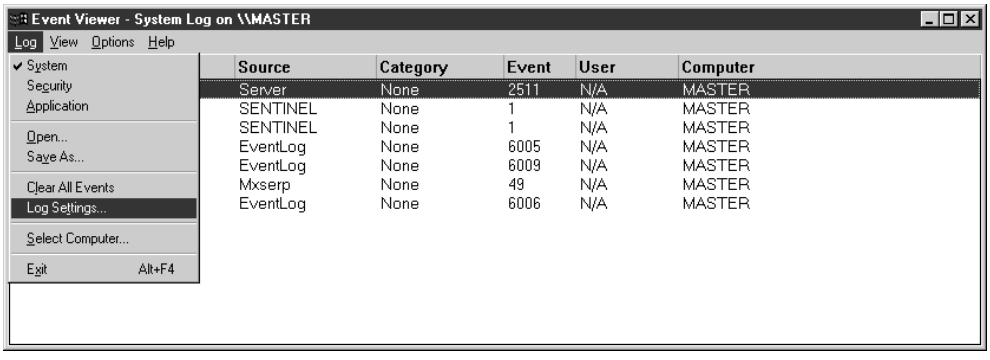

User Manager
User Policies Options Help
Username Full Name Description
Administrator Built-in account for administering the computer/domain
Guest Built-in account for guest access to the computer/domain
NS Navi-Sailor
Groups Description
Administrators Members can fully administer the computer/domain
Backup Operators Members can bypass file security to back up files
Guests Users granted guest access to the computer/domain
Power Users Members can share directories and printers
Replicator Supports file replication in a domain
Users Ordinary users



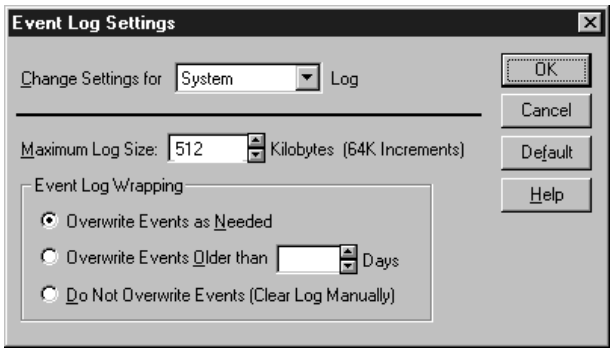
Click USER\EXIT menu. Run *Start\Programs\Administrative Tools (Common)\Event Viewer*.


Event Viewer - System Log on \\MASTER
Log View Options Help
Date Time Source Category Event User Computer
11/5/01 9:52:39 AM Server None 2511 N/A MASTER
11/5/01 9:52:36 AM SENTINEL None 1 N/A MASTER
11/5/01 9:52:36 AM SENTINEL None 1 N/A MASTER
11/5/01 9:52:22 AM EventLog None 6005 N/A MASTER
11/5/01 9:52:22 AM EventLog None 6009 N/A MASTER
11/5/01 9:52:32 AM Mxserp None 49 N/A MASTER
11/5/01 9:50:45 AM EventLog None 6006 N/A MASTER

Click LOG\LOG SETTINGS menu.



Select “Overwrite Events as Needed”.



Click “OK” button.

Restart the computer. Enter the system as NC user.

Click “OK” button.

Additional COMPORT Board Installation

The installation of the board should be effected in accordance with the board technical documentation.

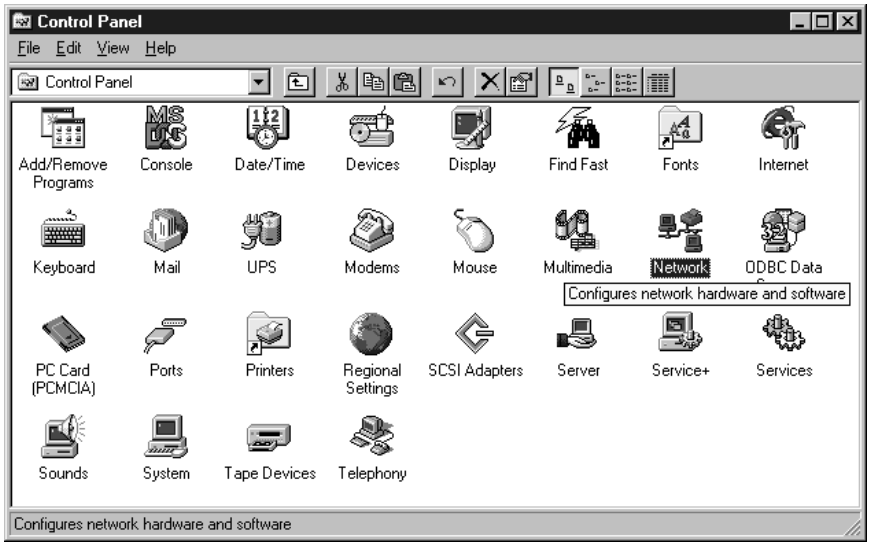
It is necessary to check the following Serial service parameters in Win NT register:

- Run Regedit: *H_KEY_Local_Machine/Current Control Set/Services/Serial*;
- ShareInterrupt and Permit Share parameters should be changed from 0 to 1;
- Restart the OS.

Should additional Com Ports not be recognized by Windows NT OS, provide access to the resources, run BIOS Setup and set the IRQ for the ISA bus or PCI.

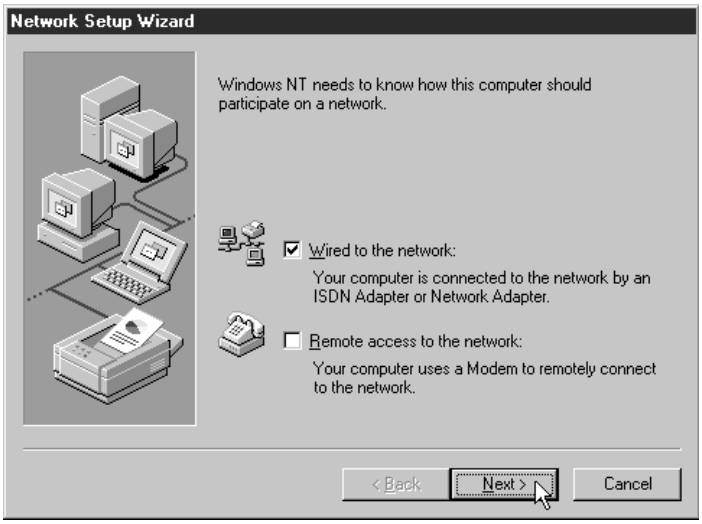
Run *Start\Settings\Control Panel*.

Double-click the “Network” icon.

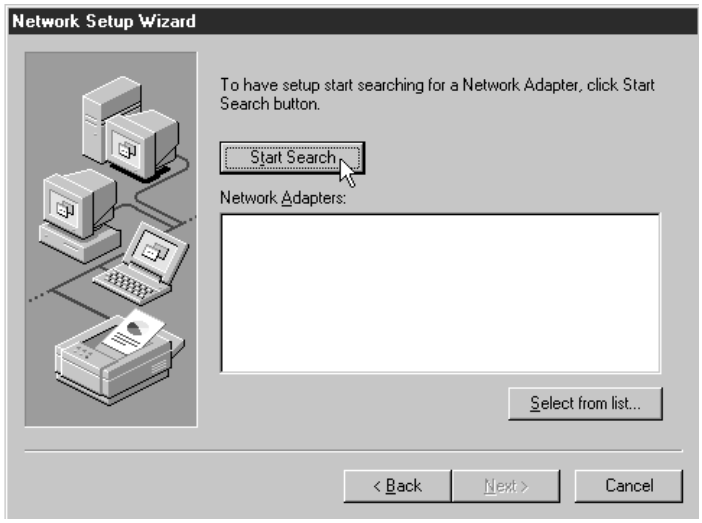


Click “Yes” button.

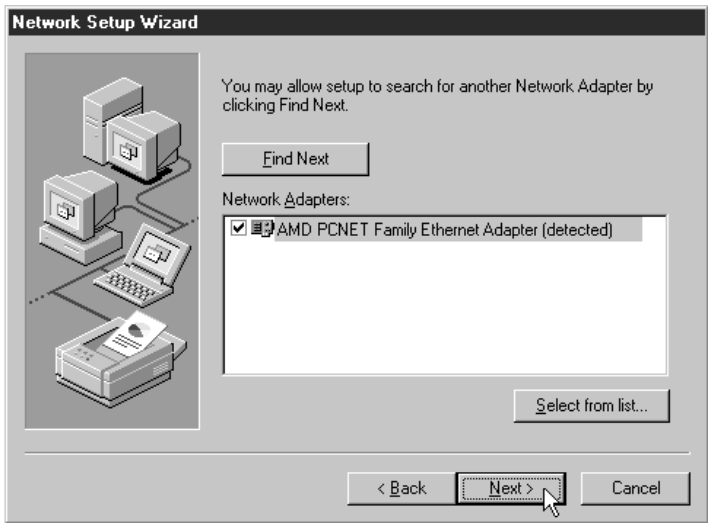
Select “Wired to the network” option. Click “Next” button.


Network Setup Wizard
Windows NT needs to know how this computer should participate on a network.
Wired to the network:
Your computer is connected to the network by an ISDN Adapter or Network Adapter.
Remote access to the network:
Your computer uses a Modem to remotely connect to the network.
< Back
Next >
Cancel

Click “Start Search” button.


Network Setup Wizard
To have setup start searching for a Network Adapter, click Start Search button.
Start Search
Network Adapters:
Select from list...
< Back
Next >
Cancel

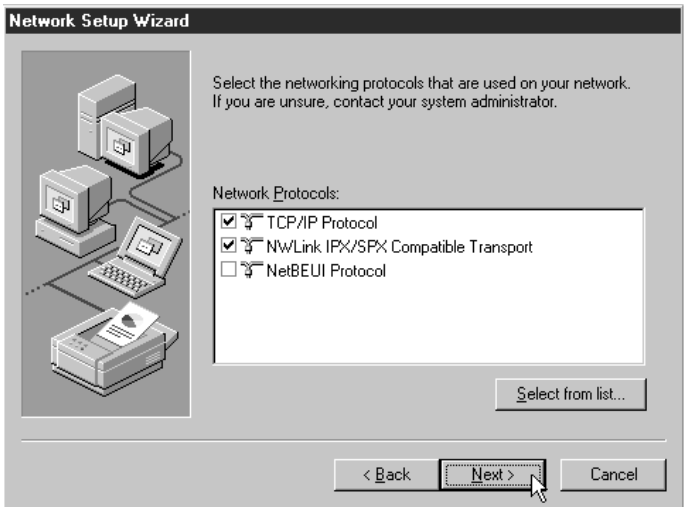
Click “Next” button.


Network Setup Wizard
You may allow setup to search for another Network Adapter by clicking Find Next.
Find Next
Network Adapters:
AMD PCNET Family Ethernet Adapter (detected)
Select from list...
< Back
Next >
Cancel

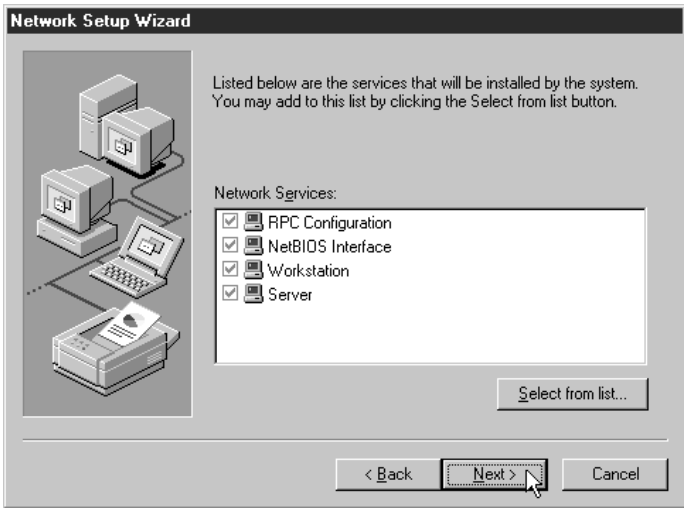
Select the following protocols:

- TCP/IP Protocol;
- NWLink IPX/SPX compatible transport.

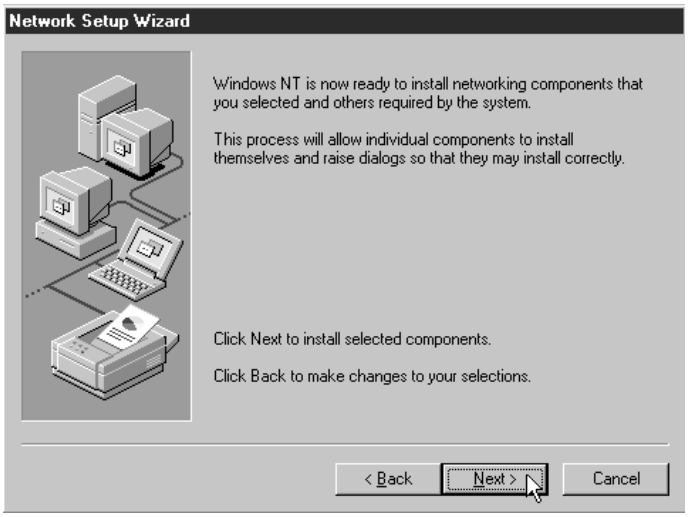
Click “Next” button.



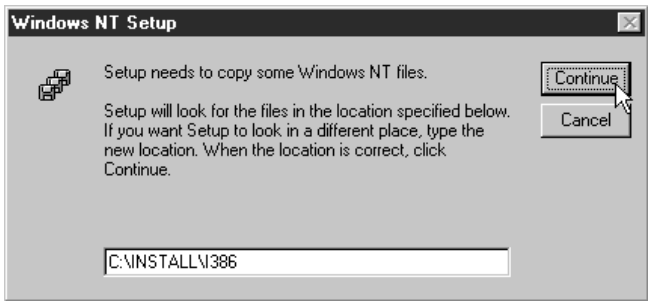
Click “Next” button.


Network Setup Wizard
Listed below are the services that will be installed by the system.
You may add to this list by clicking the Select from list button.
Network Services:
RPC Configuration
NetBIOS Interface
Workstation
Server
Select from list...
< Back
Next >
Cancel

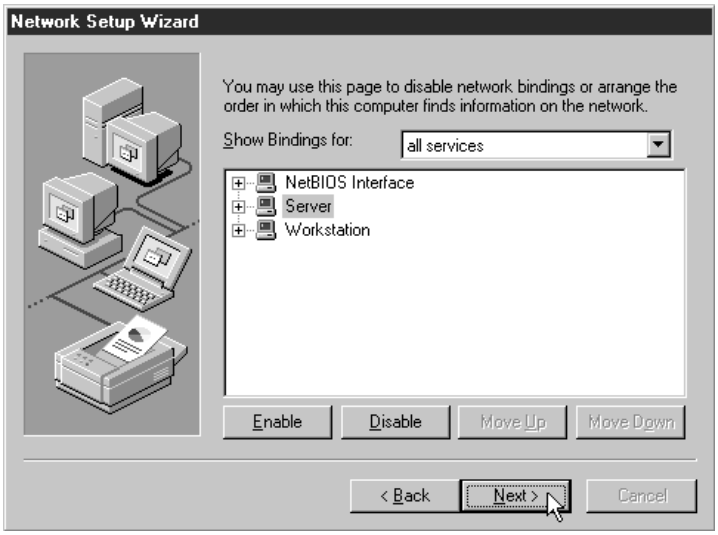
Click “Next” button.


Network Setup Wizard
Windows NT is now ready to install networking components that you selected and others required by the system.
This process will allow individual components to install themselves and raise dialogs so that they may install correctly.
Click Next to install selected components.
Click Back to make changes to your selections.
< Back
Next >
Cancel

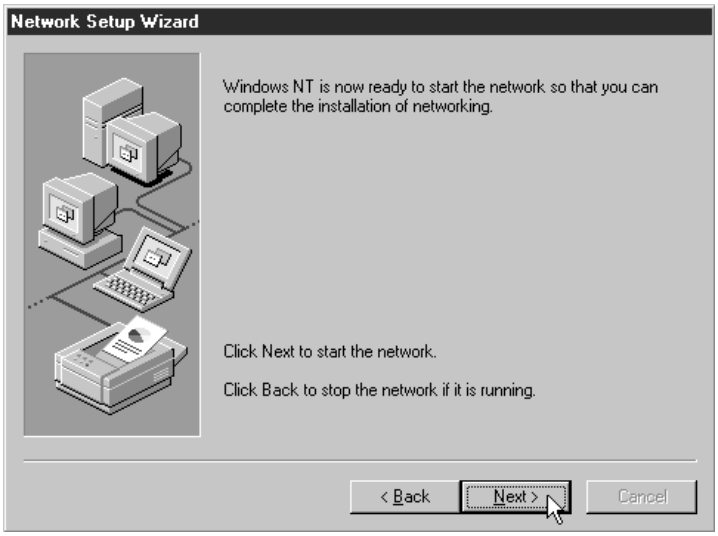
Click “Continue” button.


Windows NT Setup
Setup needs to copy some Windows NT files.
Setup will look for the files in the location specified below. If you want Setup to look in a different place, type the new location. When the location is correct, click Continue.
C:\INSTALL\I386
Continue
Cancel

Click “Next” button.



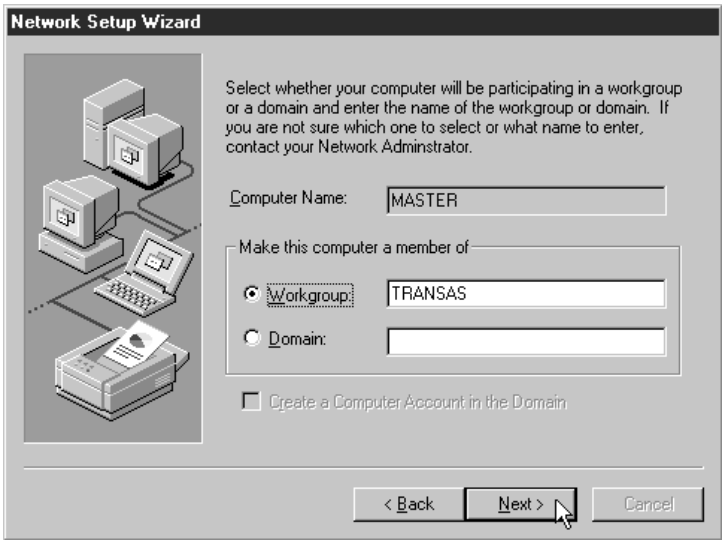
Click “Next” button.


Network Setup Wizard
Windows NT is now ready to start the network so that you can complete the installation of networking.
Click Next to start the network.
Click Back to stop the network if it is running.
< Back
Next >
Cancel

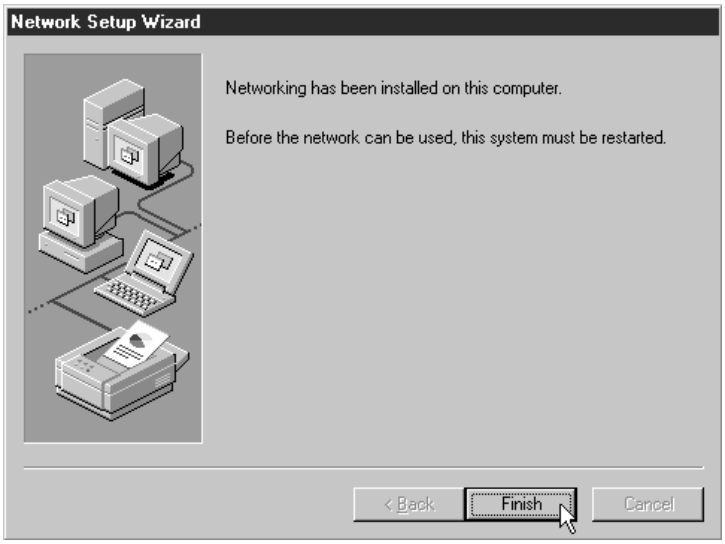
Select “Workgroup” option.

Type the name TRANSAS.

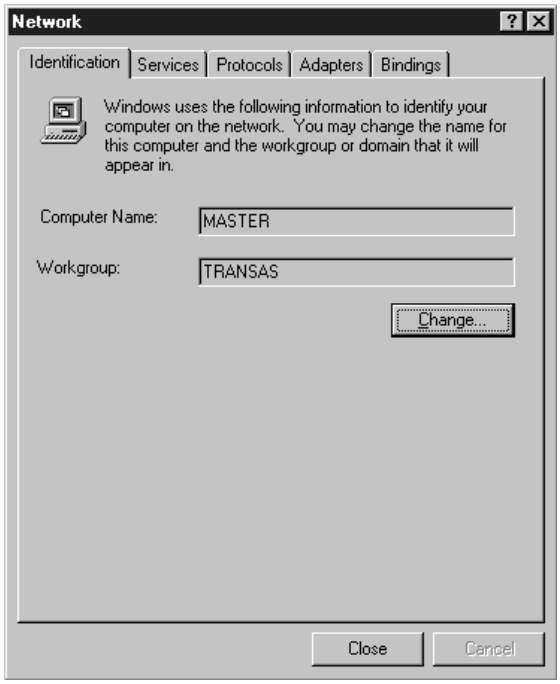
Click “Next” button.


Network Setup Wizard
Select whether your computer will be participating in a workgroup or a domain and enter the name of the workgroup or domain. If you are not sure which one to select or what name to enter, contact your Network Adminstrator.
Computer Name:
MASTER
Make this computer a member of
Workgroup:
TRANSAS
Domain:
Create a Computer Account in the Domain
< Back
Next >
Cancel

Click “Finish” button.

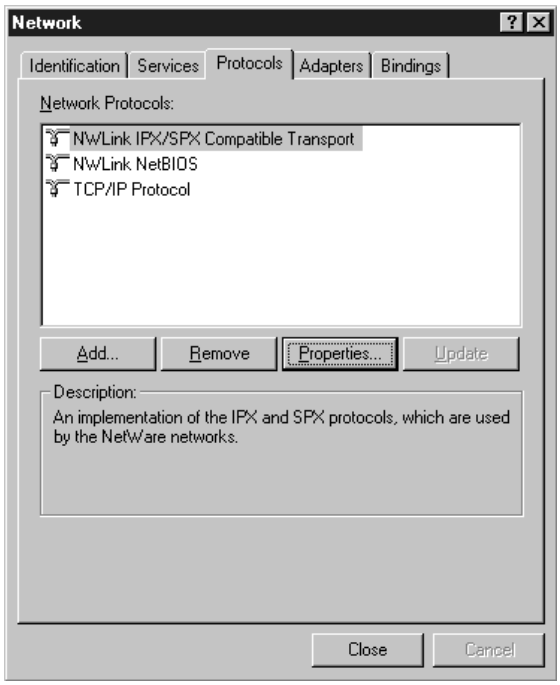

Network Setup Wizard
Networking has been installed on this computer.
Before the network can be used, this system must be restarted.
< Back
Finish
Cancel

Run *Start\Settings\Control Panel*. Double-click the “Network” icon.



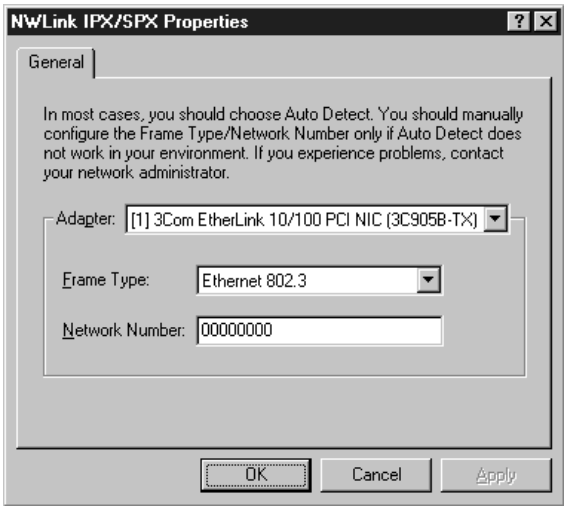
At the Protocols dialog box select “NWLink IPX/SPX Compatible Transport” protocol.

Click “Properties” button.

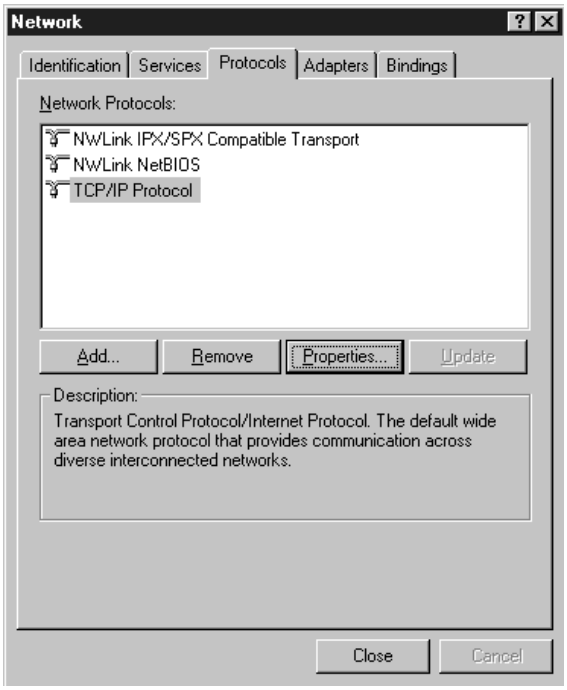


State for the Frame Type value “Ethernet 802.3”.

Click “OK” button.


NWLink IPX/SPX Properties
General
In most cases, you should choose Auto Detect. You should manually configure the Frame Type/Network Number only if Auto Detect does not work in your environment. If you experience problems, contact your network administrator.
Adapter:
[1] 3Com EtherLink 10/100 PCI NIC (3C905B-TX)
Frame Type:
Ethernet 802.3
Network Number:
00000000
OK
Cancel
Apply

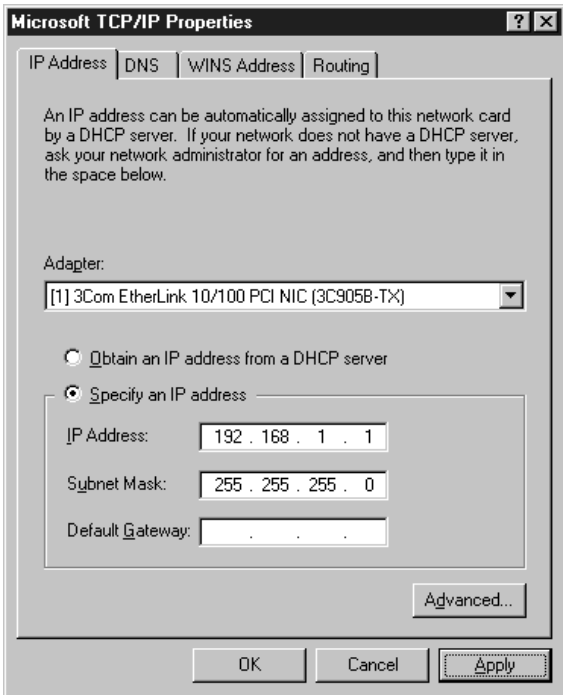
Select TCP/IP Protocol. Click “Properties” button.



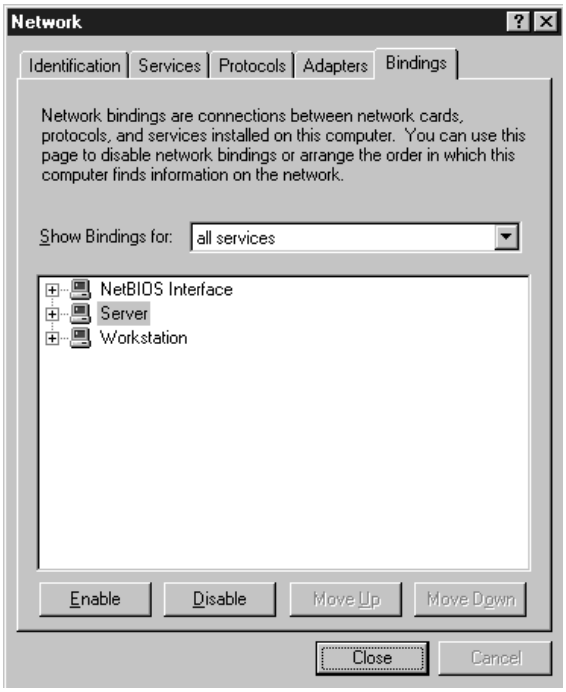
Select Specify an IP address option.

Set the following values:

- For IP Address – value 192.168.1.1. (this value should be vary for the different computers in the network, e.g. 192.168.1.2);
- For Subnet Mask value 255.255.255.0;
- For Default Gateway left the field empty.


Microsoft TCP/IP Properties
IP Address
DNS
WINS Address
Routing
An IP address can be automatically assigned to this network card by a DHCP server. If your network does not have a DHCP server, ask your network administrator for an address, and then type it in the space below.
Adapter:
[1] 3Com EtherLink 10/100 PCI NIC (3C905B-TX)
Obtain an IP address from a DHCP server
Specify an IP address
IP Address: 192 . 168 . 1 . 1
Subnet Mask: 255 . 255 . 255 . 0
Default Gateway:
Advanced...
OK
Cancel
Apply

Click “Close” button.



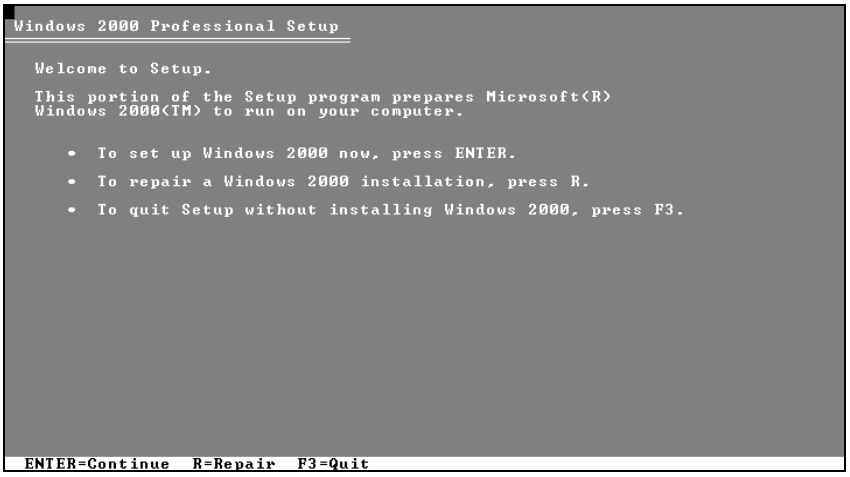
WINDOWS 2000 OS INSTALLATION

Installation of Windows 2000

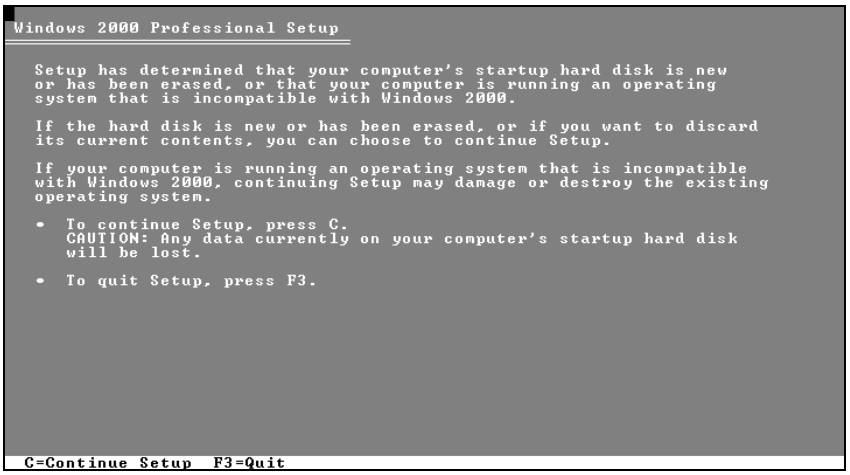
Enable in BIOS opportunity of boot loading from CD-ROM.

Start Windows 2000 installation.

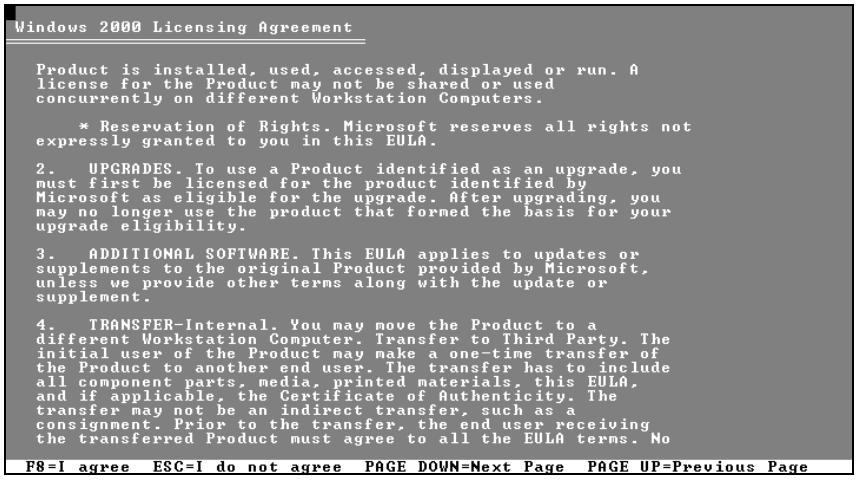
Press <Enter> button.


Windows 2000 Professional Setup
Welcome to Setup.
This portion of the Setup program prepares Microsoft(R)
Windows 2000(TM) to run on your computer.
• To set up Windows 2000 now, press ENTER.
• To repair a Windows 2000 installation, press R.
• To quit Setup without installing Windows 2000, press F3.
ENTER=Continue R=Repair F3=Quit

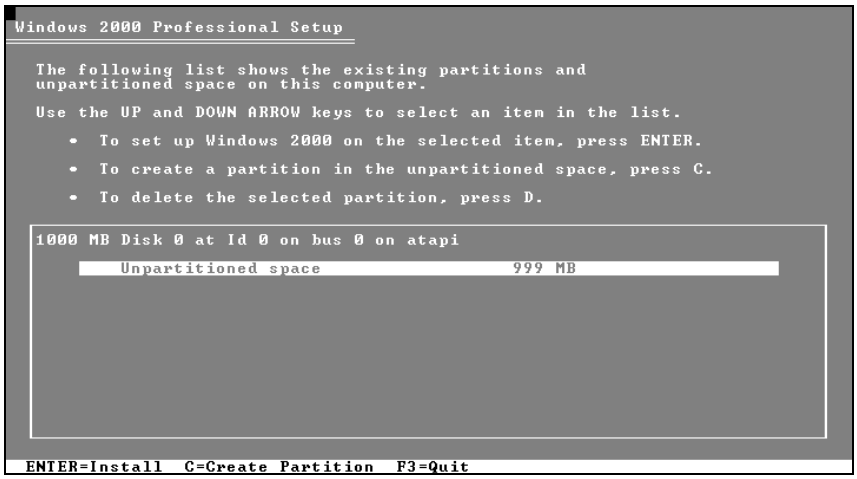
Press <C> button.


Windows 2000 Professional Setup
Setup has determined that your computer's startup hard disk is new
or has been erased, or that your computer is running an operating
system that is incompatible with Windows 2000.
If the hard disk is new or has been erased, or if you want to discard
its current contents, you can choose to continue Setup.
If your computer is running an operating system that is incompatible
with Windows 2000, continuing Setup may damage or destroy the existing
operating system.
• To continue Setup, press C.
CAUTION: Any data currently on your computer's startup hard disk
will be lost.
• To quit Setup, press F3.
C=Continue Setup F3=Quit

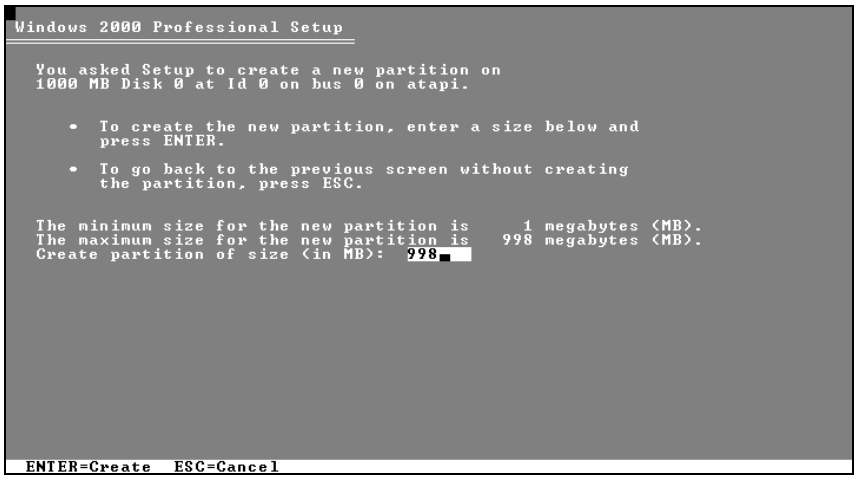
Press <F8> button.


Windows 2000 Licensing Agreement
Product is installed, used, accessed, displayed or run. A
license for the Product may not be shared or used
concurrently on different Workstation Computers.
* Reservation of Rights. Microsoft reserves all rights not
expressly granted to you in this EULA.
2. UPGRADES. To use a Product identified as an upgrade, you
must first be licensed for the product identified by
Microsoft as eligible for the upgrade. After upgrading, you
may no longer use the product that formed the basis for your
upgrade eligibility.
3. ADDITIONAL SOFTWARE. This EULA applies to updates or
supplements to the original Product provided by Microsoft,
unless we provide other terms along with the update or
supplement.
4. TRANSFER-Internal. You may move the Product to a
different Workstation Computer. Transfer to Third Party. The
initial user of the Product may make a one-time transfer of
the Product to another end user. The transfer has to include
all component parts, media, printed materials, this EULA,
and if applicable, the Certificate of Authenticity. The
transfer may not be an indirect transfer, such as a
consignment. Prior to the transfer, the end user receiving
the transferred Product must agree to all the EULA terms. No
F8=I agree ESC=I do not agree PAGE DOWN=Next Page PAGE UP=Previous Page

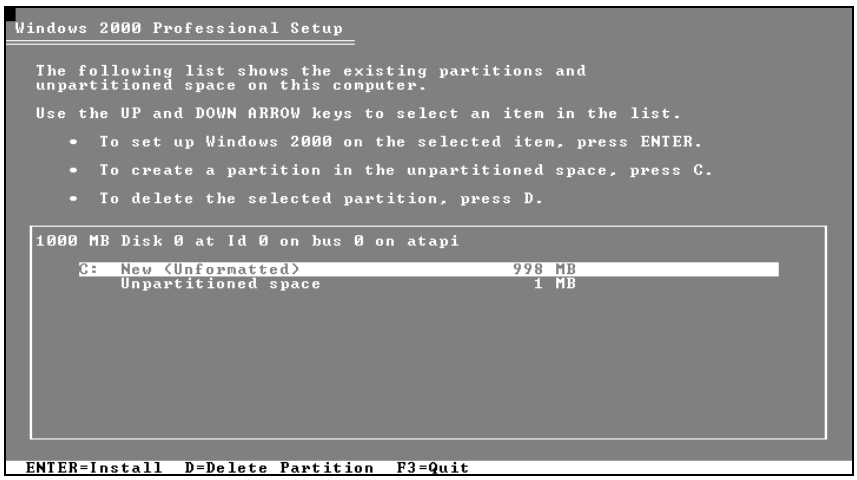
Press <C> button.


Windows 2000 Professional Setup
The following list shows the existing partitions and unpartitioned space on this computer.
Use the UP and DOWN ARROW keys to select an item in the list.
• To set up Windows 2000 on the selected item, press ENTER.
• To create a partition in the unpartitioned space, press C.
• To delete the selected partition, press D.
1000 MB Disk 0 at Id 0 on bus 0 on atapi
Unpartitioned space 999 MB
ENTER=Install C=Create Partition F3=Quit

Press <Enter> button.

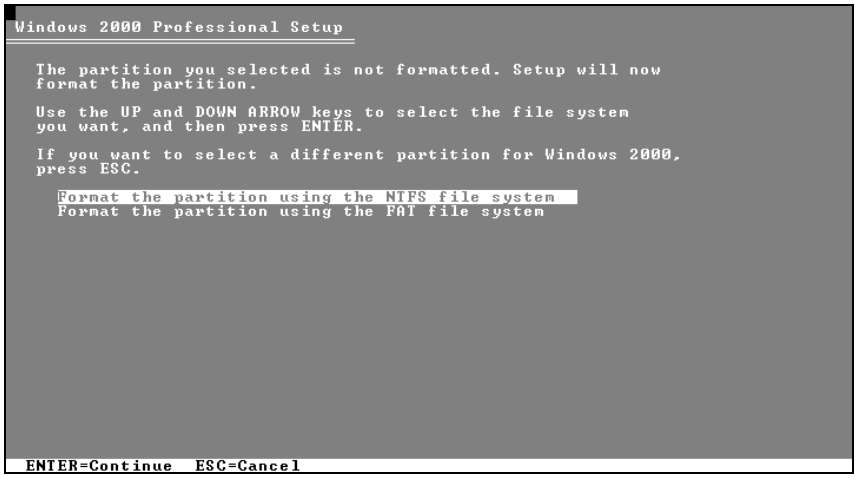

Windows 2000 Professional Setup
You asked Setup to create a new partition on 1000 MB Disk 0 at Id 0 on bus 0 on atapi.
• To create the new partition, enter a size below and press ENTER.
• To go back to the previous screen without creating the partition, press ESC.
The minimum size for the new partition is 1 megabytes (MB).
The maximum size for the new partition is 998 megabytes (MB).
Create partition of size (in MB): 998
ENTER=Create ESC=Cancel

Press <Enter> button.


Windows 2000 Professional Setup
The following list shows the existing partitions and unpartitioned space on this computer.
Use the UP and DOWN ARROW keys to select an item in the list.
• To set up Windows 2000 on the selected item, press ENTER.
• To create a partition in the unpartitioned space, press C.
• To delete the selected partition, press D.
1000 MB Disk 0 at Id 0 on bus 0 on atapi
C: New (Unformatted) 998 MB
Unpartitioned space 1 MB
ENTER=Install D=Delete Partition F3=Quit

Select Format the partition using the NTFS file system option.

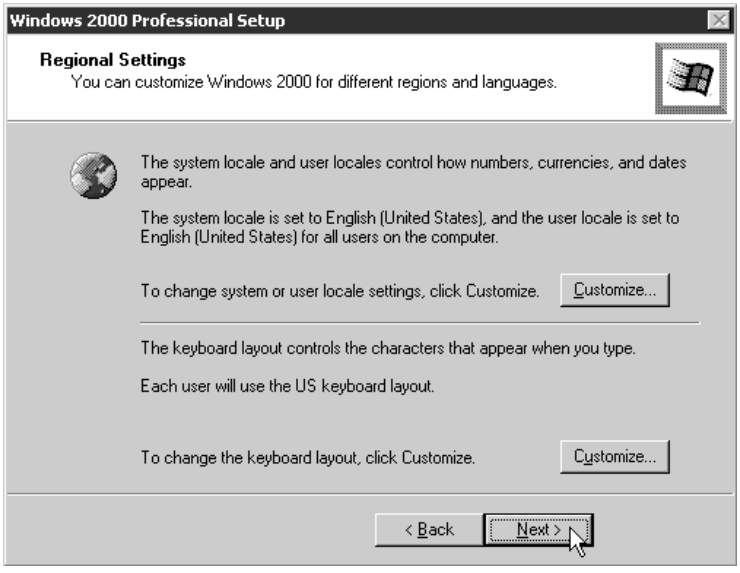
Press <Enter> button.


Windows 2000 Professional Setup
The partition you selected is not formatted. Setup will now format the partition.
Use the UP and DOWN ARROW keys to select the file system you want, and then press ENTER.
If you want to select a different partition for Windows 2000, press ESC.
Format the partition using the NTFS file system
Format the partition using the FAT file system
ENTER=Continue ESC=Cancel

Click “Next” button.

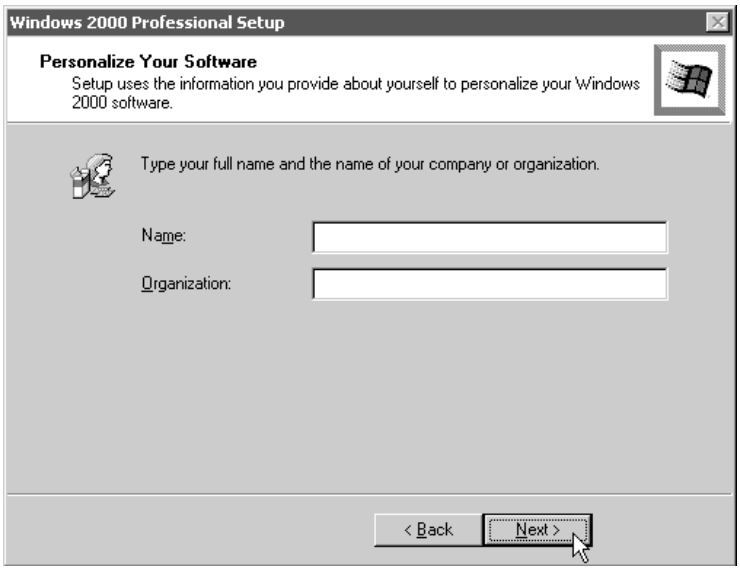
Windows 2000 Professional Setup
Welcome to the Windows 2000 Setup Wizard
This wizard installs Windows 2000 Professional on your computer. The wizard needs to gather some information about you and your computer to set up Windows 2000 properly.
Click Next to continue with Setup.
Windows 2000
< Back
Next >

Click “Next” button.

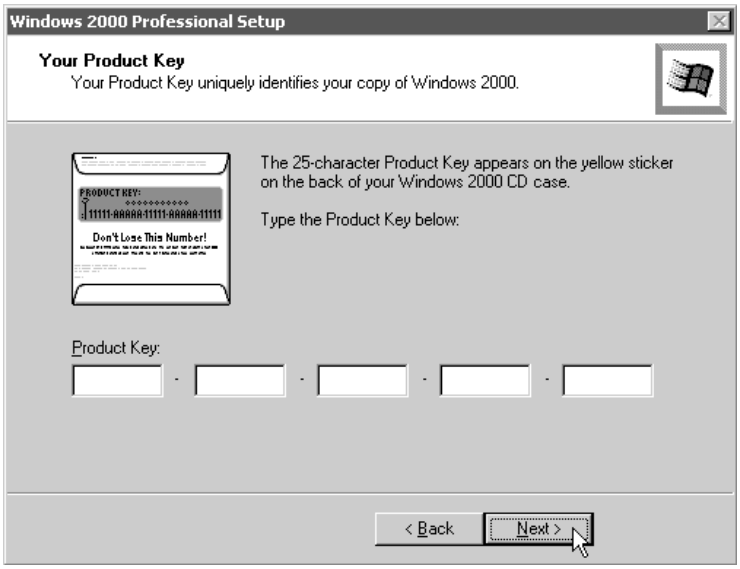

Windows 2000 Professional Setup
Regional Settings
You can customize Windows 2000 for different regions and languages.
The system locale and user locales control how numbers, currencies, and dates appear.
The system locale is set to English (United States), and the user locale is set to English (United States) for all users on the computer.
To change system or user locale settings, click Customize.
Customize...
The keyboard layout controls the characters that appear when you type.
Each user will use the US keyboard layout.
To change the keyboard layout, click Customize.
Customize...
< Back
Next >

Enter Windows 2000 owner name and his company.

Click “Next” button.


Windows 2000 Professional Setup
Personalize Your Software
Setup uses the information you provide about yourself to personalize your Windows 2000 software.
Type your full name and the name of your company or organization.
Name:
Organization:
< Back
Next >

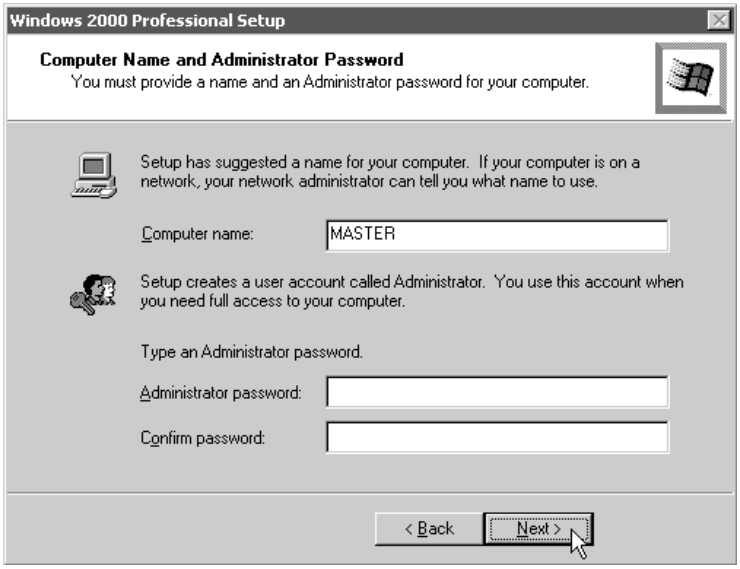
Enter Product ID – OS registration number. Click “Next” button.


Windows 2000 Professional Setup
Your Product Key
Your Product Key uniquely identifies your copy of Windows 2000.
PRODUCT KEY:
11111-AAAAA-11111-AAAAA-11111
Don't Lose This Number!
The 25-character Product Key appears on the yellow sticker on the back of your Windows 2000 CD case.
Type the Product Key below:
Product Key:
< Back
Next >

Enter the computer name – MASTER. For networked with Navi-Sailor/Navi-Conning systems all the computers in the network should be named next way – MASTER, BACKUP, SLAVE1, SLAVE2 etc. in accordance with computer administration in a network.

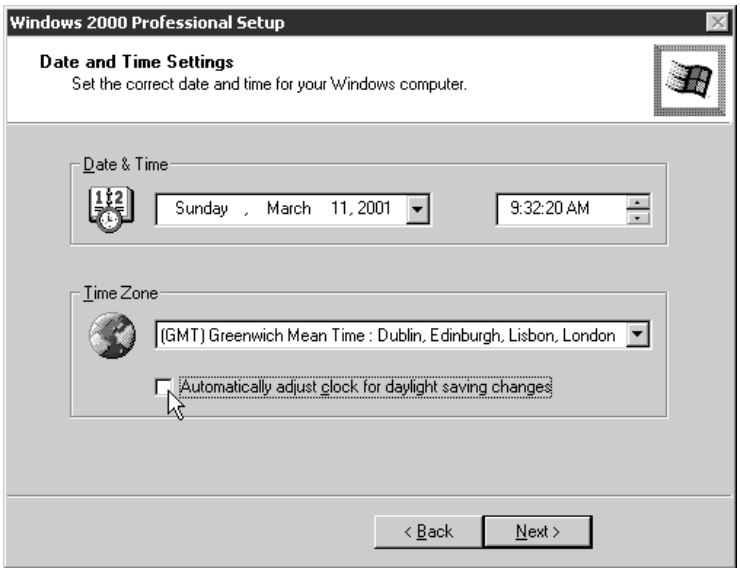
For user with Administrator account password should stay empty.

Click “Next” button.

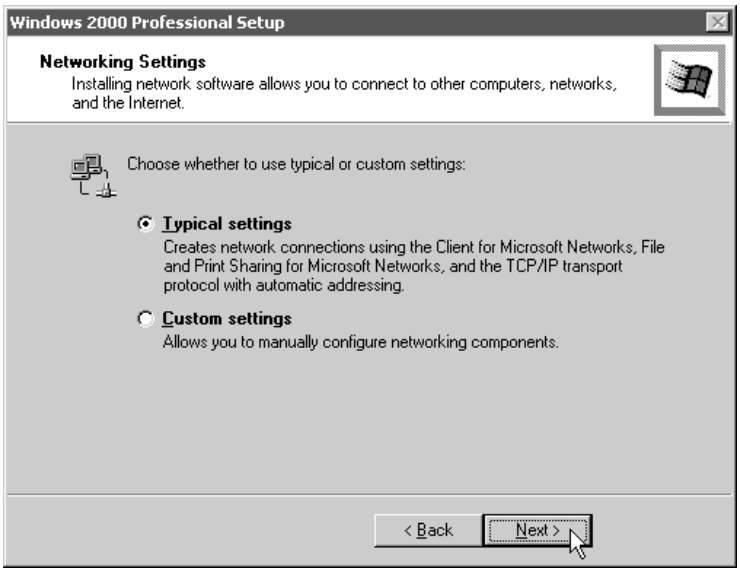

Windows 2000 Professional Setup
Computer Name and Administrator Password
You must provide a name and an Administrator password for your computer.
Setup has suggested a name for your computer. If your computer is on a network, your network administrator can tell you what name to use.
Computer name:
MASTER
Setup creates a user account called Administrator. You use this account when you need full access to your computer.
Type an Administrator password.
Administrator password:
Confirm password:
< Back
Next >

Switch off “Automatically adjust clock for daylight saving changes” check box.

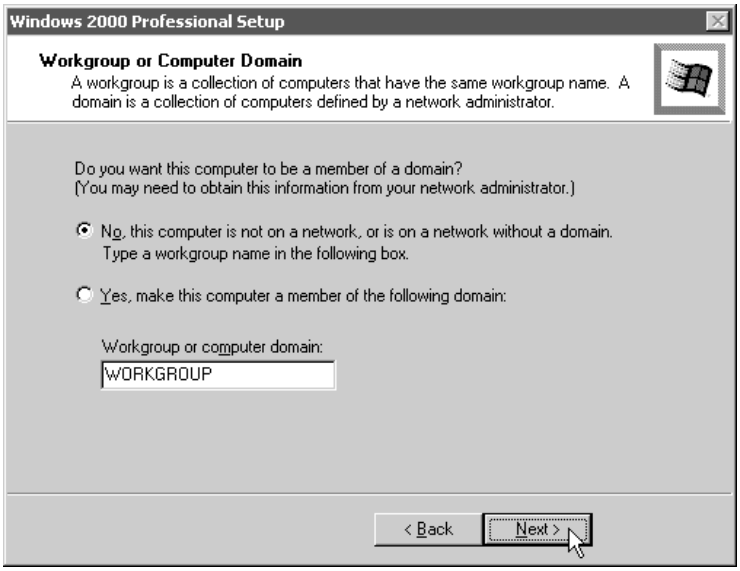
Click “Next” button.


Windows 2000 Professional Setup
Date and Time Settings
Set the correct date and time for your Windows computer.
Date & Time
Sunday , March 11, 2001
9:32:20 AM
Time Zone
(GMT) Greenwich Mean Time : Dublin, Edinburgh, Lisbon, London
Automatically adjust clock for daylight saving changes
< Back
Next >

Click “Next” button.

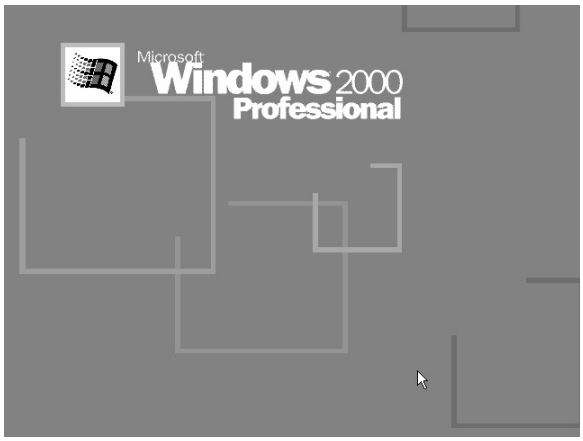

Windows 2000 Professional Setup
Networking Settings
Installing network software allows you to connect to other computers, networks, and the Internet.
Choose whether to use typical or custom settings:
Typical settings
Creates network connections using the Client for Microsoft Networks, File and Print Sharing for Microsoft Networks, and the TCP/IP transport protocol with automatic addressing.
Custom settings
Allows you to manually configure networking components.
< Back
Next >

Select “No”, this computer is not on a network, or is on a network without a domain option. Click “Next” button.


Windows 2000 Professional Setup
Workgroup or Computer Domain
A workgroup is a collection of computers that have the same workgroup name. A domain is a collection of computers defined by a network administrator.
Do you want this computer to be a member of a domain?
(You may need to obtain this information from your network administrator.)
No, this computer is not on a network, or is on a network without a domain.
Type a workgroup name in the following box.
Yes, make this computer a member of the following domain:
Workgroup or computer domain:
WORKGROUP
< Back
Next >

Click “Finish” button.

Windows 2000 Professional Setup
Completing the Windows 2000 Setup Wizard
You have successfully completed Windows 2000 Setup.
If there is a CD in your drive, remove it. Then, to restart your computer, click Finish.
Microsoft Windows 2000
< Back
Finish



Click “Next” button.

Network Identification Wizard
Welcome to the Network Identification Wizard
This wizard helps you connect your computer to a network.
To continue, click Next.
< Back
Next >
Cancel

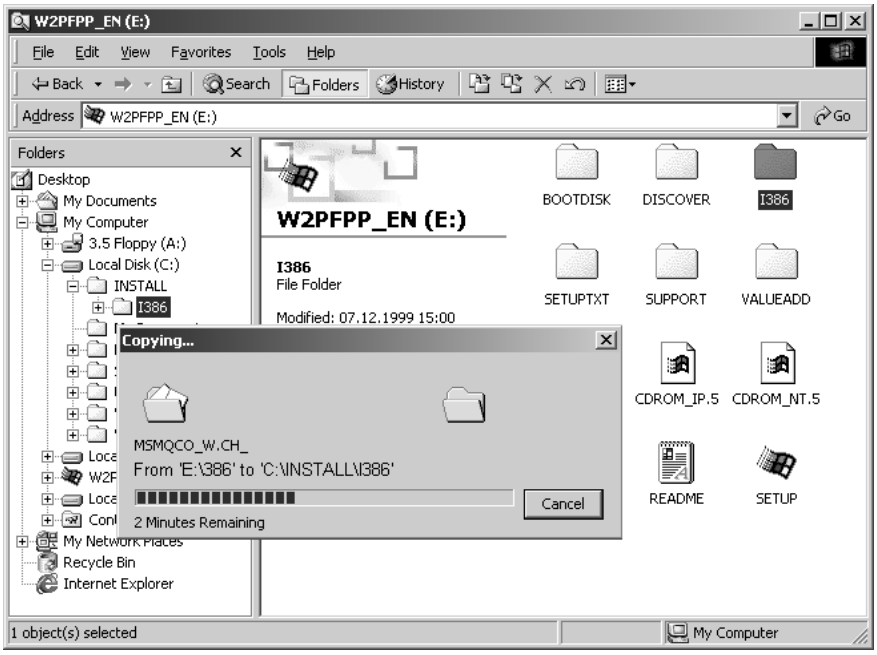
Click “Finish” button.

Click “OK” button.

Switch off “Show this screen at startup” option.

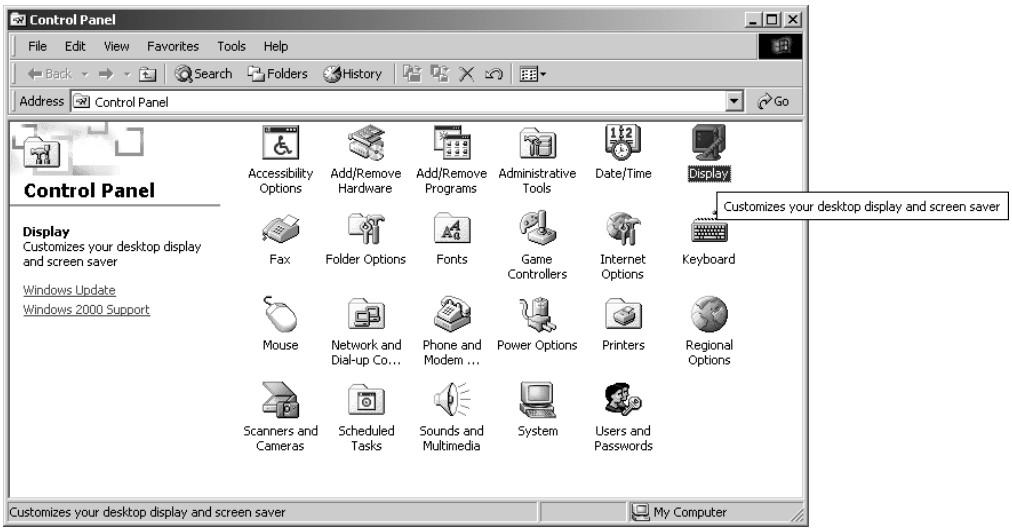
Click “Exit” button.

Copy I386 subdirectory from “Windows 2000 professional CD” (<*CD-drive*>*\I386*) onto hard disk to path *C:\INSTALL\I386*. Installation of Windows 2000 Service Pack 1 should be copied as well (*C:\INSTALL\SP1*).



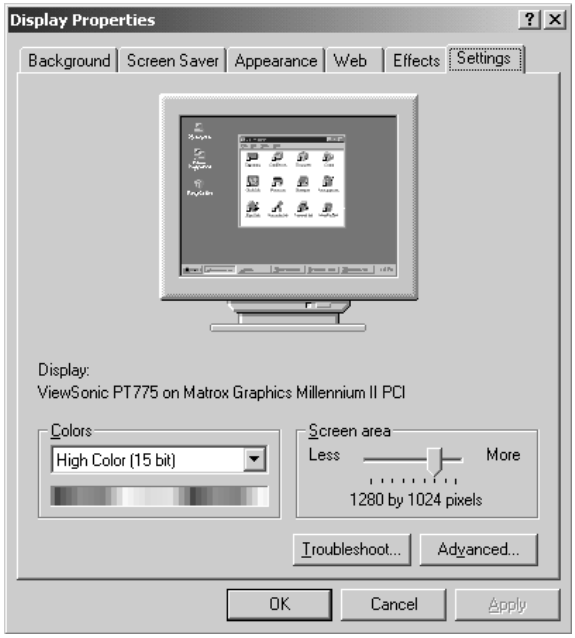
Run *Start\Settings\Control Panel*.

Click “Display” icon.



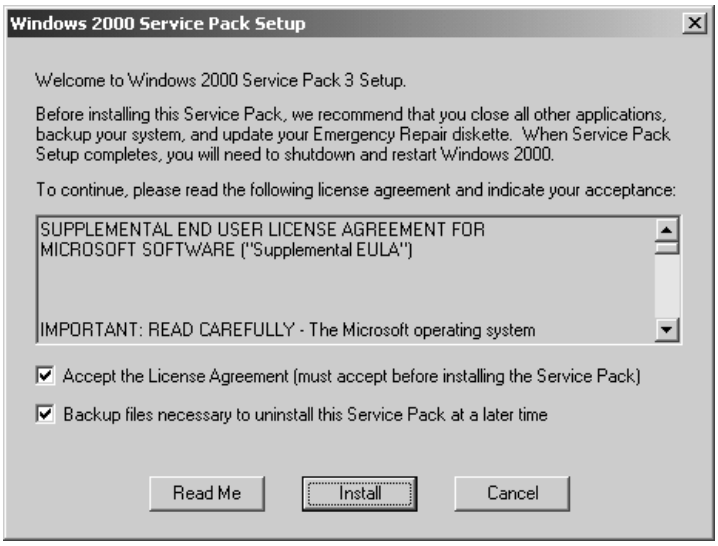
Set the video mode. The resolution should have one of the following values: 1024x768, 1280x1024. Set the min. number of colors at 32768 (High color 16 bit).

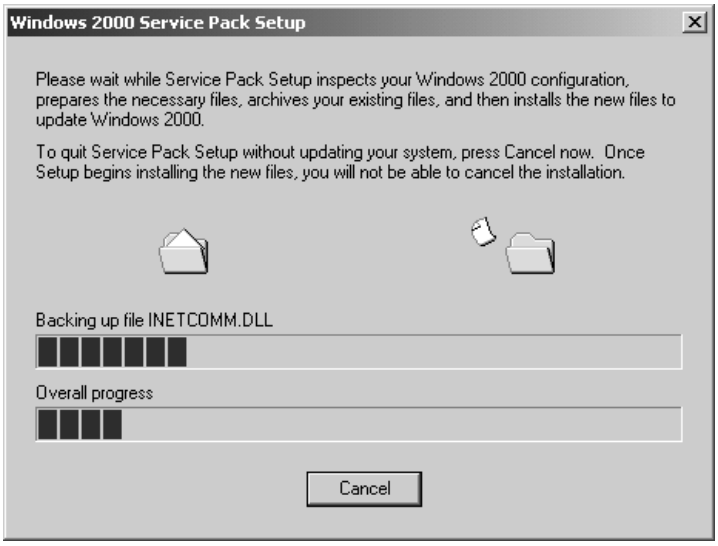
Click “OK” button.



Run Windows 2000 Service Pack 3 installation.

Click “Install” button.


Windows 2000 Service Pack Setup
Welcome to Windows 2000 Service Pack 3 Setup.
Before installing this Service Pack, we recommend that you close all other applications, backup your system, and update your Emergency Repair diskette. When Service Pack Setup completes, you will need to shutdown and restart Windows 2000.
To continue, please read the following license agreement and indicate your acceptance:
SUPPLEMENTAL END USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE ("Supplemental EULA")
IMPORTANT: READ CAREFULLY - The Microsoft operating system
Accept the License Agreement (must accept before installing the Service Pack)
Backup files necessary to uninstall this Service Pack at a later time
Read Me
Install
Cancel

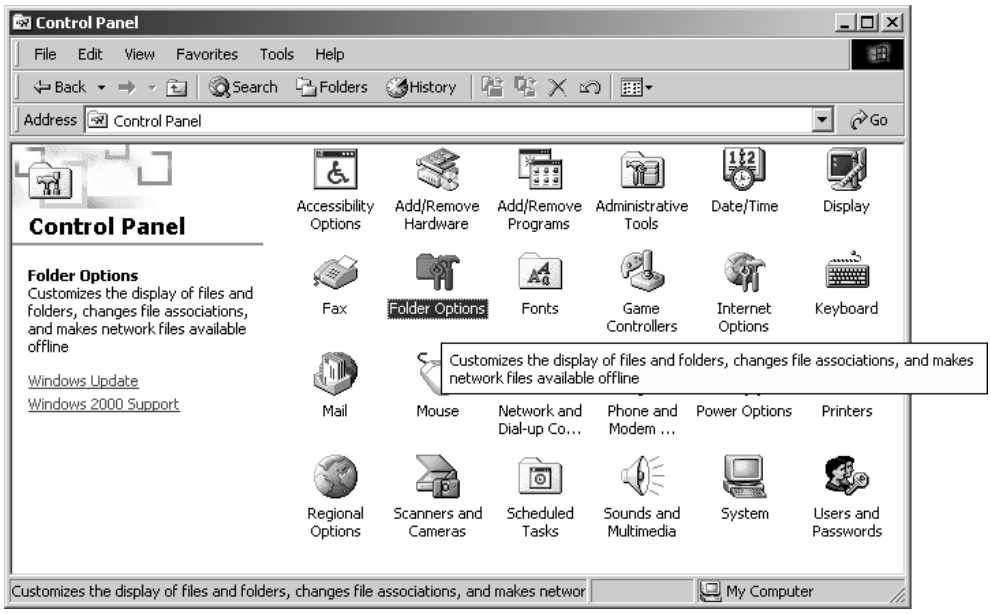

Windows 2000 Service Pack Setup
Please wait while Service Pack Setup inspects your Windows 2000 configuration, prepares the necessary files, archives your existing files, and then installs the new files to update Windows 2000.
To quit Service Pack Setup without updating your system, press Cancel now. Once Setup begins installing the new files, you will not be able to cancel the installation.
Backing up file INETCOMM.DLL
Overall progress
Cancel

Click “Restart” button.

Windows 2000 Service Pack Setup
Windows 2000 Service Pack 3 installation is complete. You must restart your computer for the Service Pack update to take effect.
Restart

Run *Start\Settings\Control Panel.*

Click “Folder Options” icon.

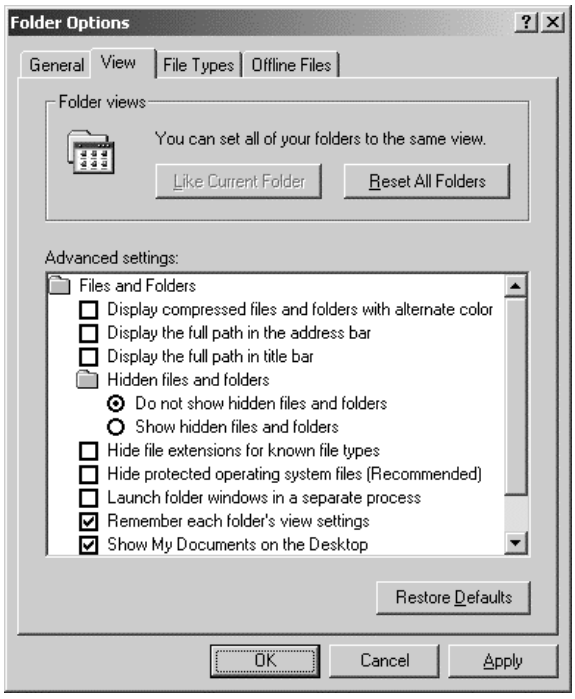


Select “Show hidden files and folders”.

Switch off “Hide file extensions for known file types”.

Switch off “Hide protected operating systems files (Recommended)”.

Click “OK” button.

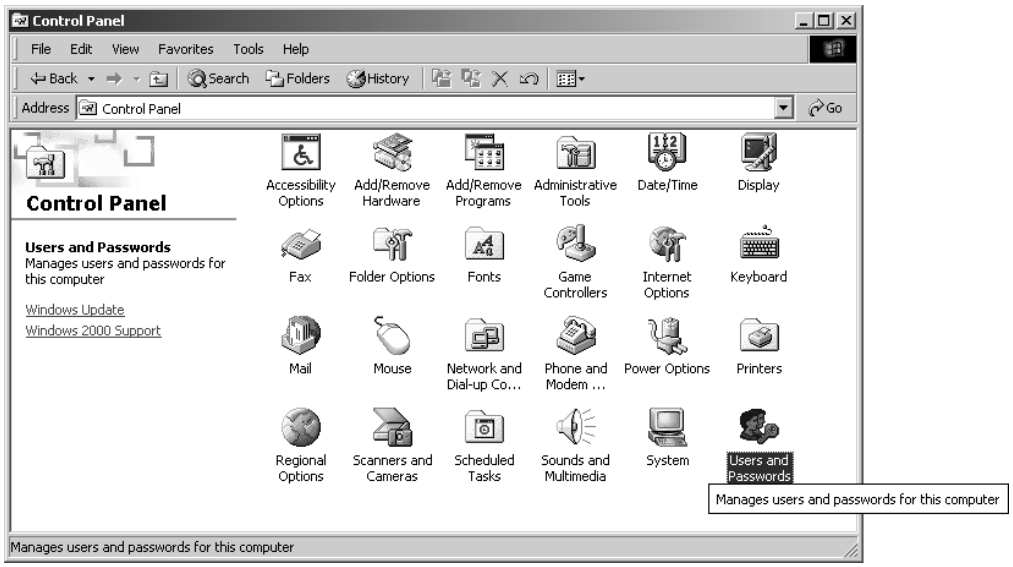

Folder Options
General View File Types Offline Files
Folder views
You can set all of your folders to the same view.
Like Current Folder
Reset All Folders
Advanced settings:
Files and Folders
Display compressed files and folders with alternate color
Display the full path in the address bar
Display the full path in title bar
Hidden files and folders
Do not show hidden files and folders
Show hidden files and folders
Hide file extensions for known file types
Hide protected operating system files (Recommended)
Launch folder windows in a separate process
Remember each folder's view settings
Show My Documents on the Desktop
Restore Defaults
OK
Cancel
Apply

Edit `boot.ini` file as follows:

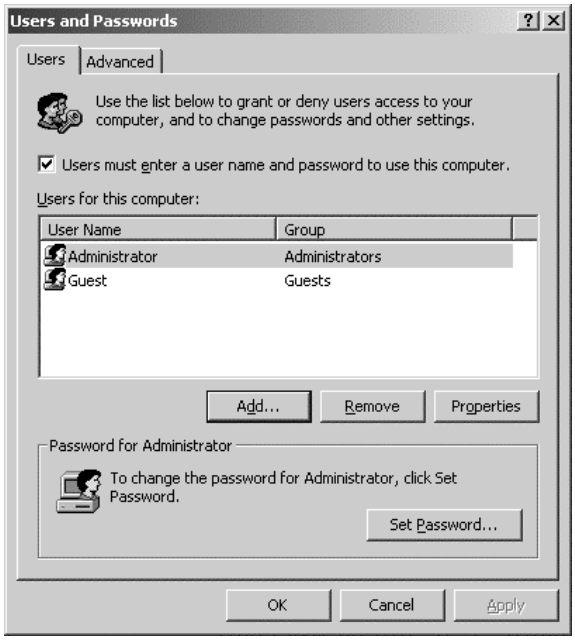
- Set `TIMEOUT=1`;
- In `[Operating Systems]` section at the end of text line add/`NOSERIALMICE` parameter.

Run *Start\Settings\Control Panel*.

Click “Users and Passwords” icon.



Select “Administrator” group and click “Add” button.



Enter the information:

- User name – NS;
- Full name – NAVI-SAILOR;
- Description – empty.

Click “Next” button.

Type and confirm a password:

- Password – NS;
- Confirm password – NS.

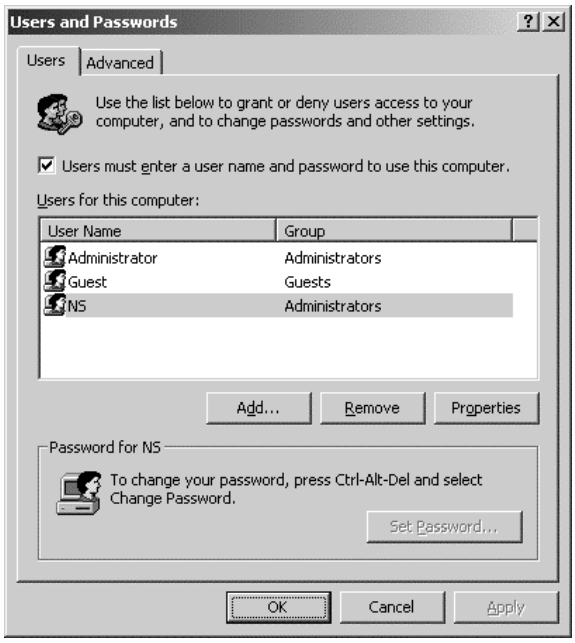
Click “Next” button.

Select “Other” option and set “Administrators” group.

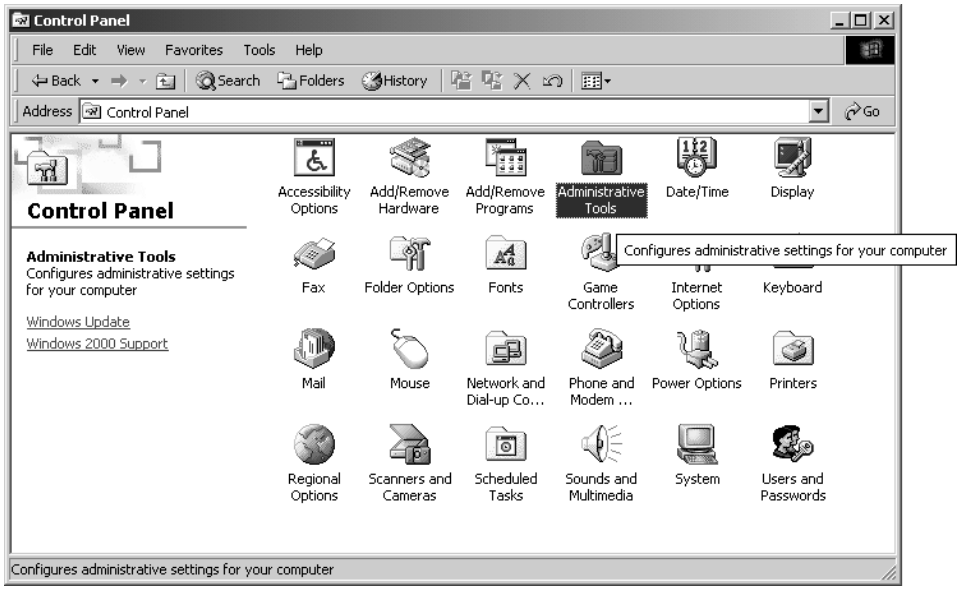
Click “Finish” button.

Add New User
What level of access do you want to grant this user?
Standard user (Power Users Group)
Users can modify the computer and install programs, but cannot read files that belong to other users.
Restricted user (Users Group)
Users can operate the computer and save documents, but cannot install programs or make potentially damaging changes to the system files and settings.
Other:
Administrators
Administrators have complete and unrestricted access to the computer/domain
< Back
Finish
Cancel

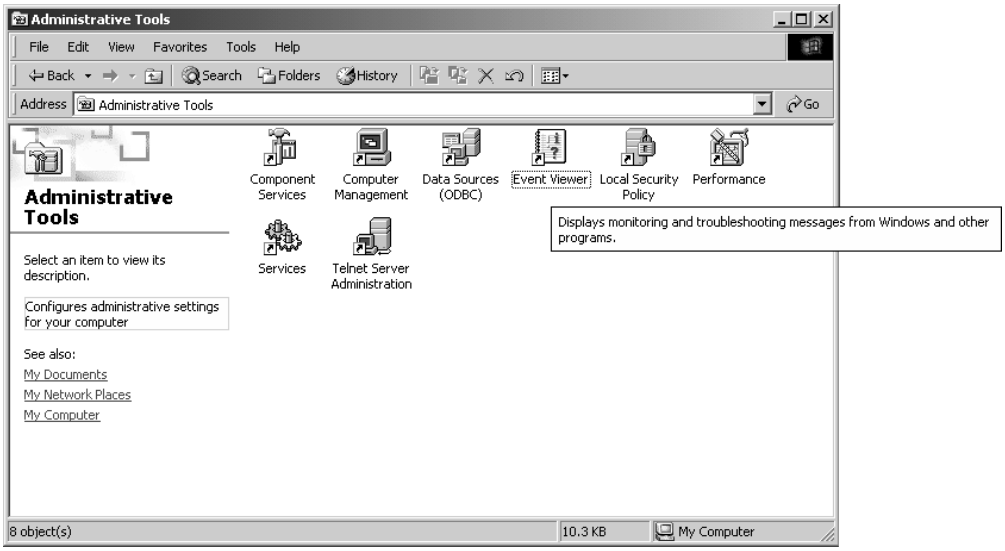
Click “OK” button.



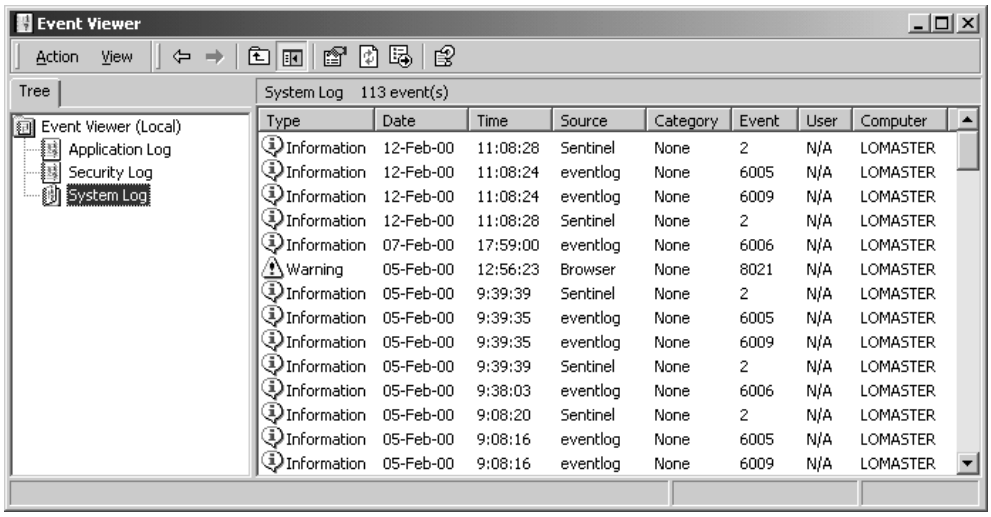
Click “Administrative Tools” icon.



Click “Event Viewer” icon.

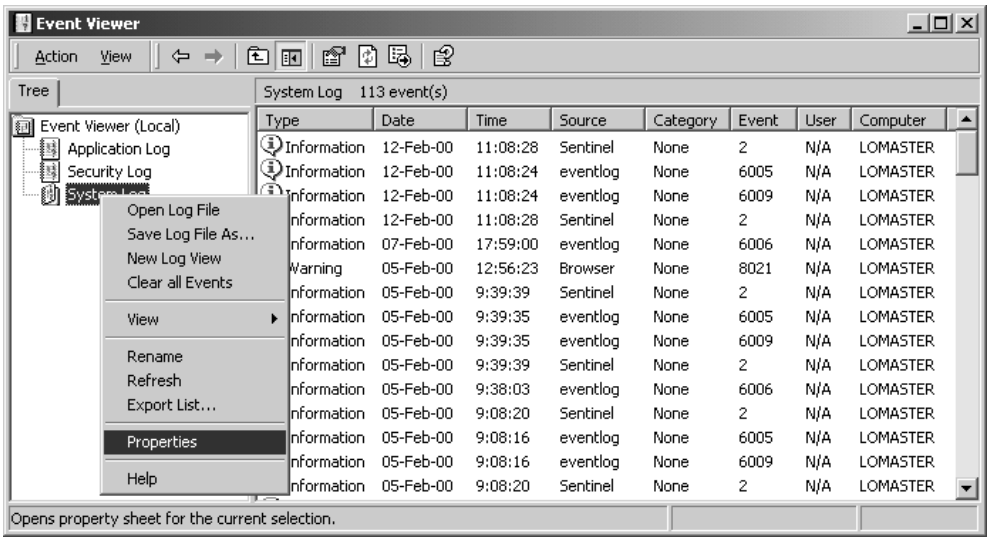


Select “System Log” folder.


Event Viewer
Action View
Tree
System Log 113 event(s)
Event Viewer (Local)
Application Log
Security Log
System Log
Type Date Time Source Category Event User Computer
Information 12-Feb-00 11:08:28 Sentinel None 2 N/A LOMASTER
Information 12-Feb-00 11:08:24 eventlog None 6005 N/A LOMASTER
Information 12-Feb-00 11:08:24 eventlog None 6009 N/A LOMASTER
Information 12-Feb-00 11:08:28 Sentinel None 2 N/A LOMASTER
Information 07-Feb-00 17:59:00 eventlog None 6006 N/A LOMASTER
Warning 05-Feb-00 12:56:23 Browser None 8021 N/A LOMASTER
Information 05-Feb-00 9:39:39 Sentinel None 2 N/A LOMASTER
Information 05-Feb-00 9:39:35 eventlog None 6005 N/A LOMASTER
Information 05-Feb-00 9:39:35 eventlog None 6009 N/A LOMASTER
Information 05-Feb-00 9:39:39 Sentinel None 2 N/A LOMASTER
Information 05-Feb-00 9:38:03 eventlog None 6006 N/A LOMASTER
Information 05-Feb-00 9:08:20 Sentinel None 2 N/A LOMASTER
Information 05-Feb-00 9:08:16 eventlog None 6005 N/A LOMASTER
Information 05-Feb-00 9:08:16 eventlog None 6009 N/A LOMASTER

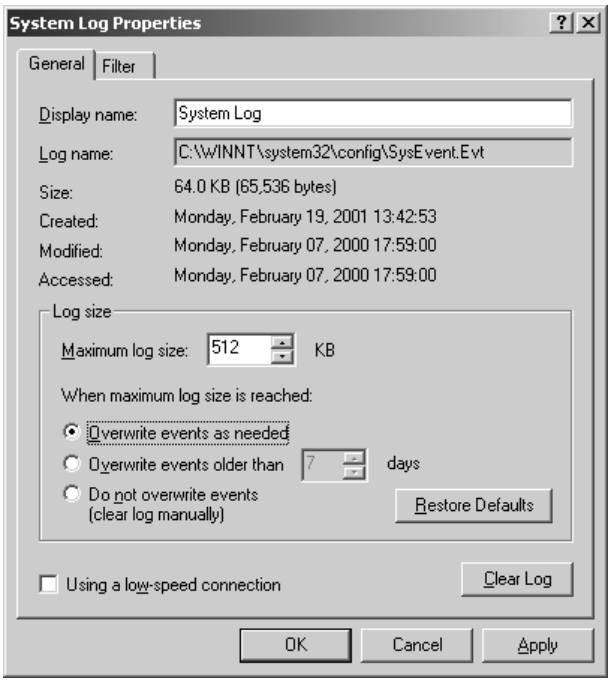
Click right mouse button.

Click PROPERTIES item.

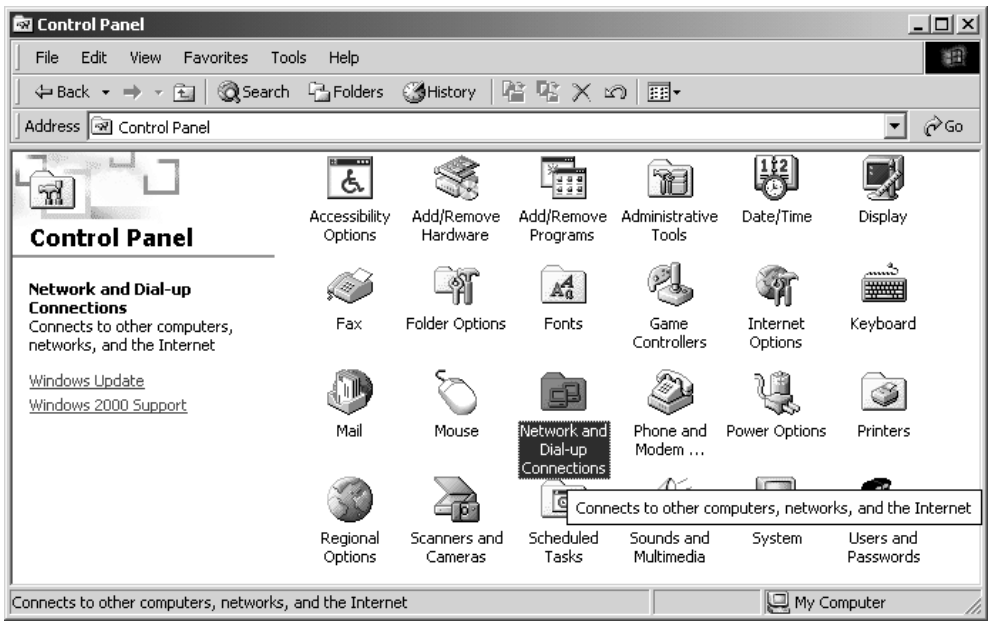

Event Viewer
Action View
Tree
System Log 113 event(s)
Event Viewer (Local)
Application Log
Security Log
System Log
Open Log File
Save Log File As...
New Log View
Clear all Events
View
Rename
Refresh
Export List...
Properties
Help
Type Date Time Source Category Event User Computer
Information 12-Feb-00 11:08:28 Sentinel None 2 N/A LOMASTER
Information 12-Feb-00 11:08:24 eventlog None 6005 N/A LOMASTER
Information 12-Feb-00 11:08:24 eventlog None 6009 N/A LOMASTER
Information 12-Feb-00 11:08:28 Sentinel None 2 N/A LOMASTER
Information 07-Feb-00 17:59:00 eventlog None 6006 N/A LOMASTER
Warning 05-Feb-00 12:56:23 Browser None 8021 N/A LOMASTER
Information 05-Feb-00 9:39:39 Sentinel None 2 N/A LOMASTER
Information 05-Feb-00 9:39:35 eventlog None 6005 N/A LOMASTER
Information 05-Feb-00 9:39:35 eventlog None 6009 N/A LOMASTER
Information 05-Feb-00 9:39:39 Sentinel None 2 N/A LOMASTER
Information 05-Feb-00 9:38:03 eventlog None 6006 N/A LOMASTER
Information 05-Feb-00 9:08:20 Sentinel None 2 N/A LOMASTER
Information 05-Feb-00 9:08:16 eventlog None 6005 N/A LOMASTER
Information 05-Feb-00 9:08:16 eventlog None 6009 N/A LOMASTER
Information 05-Feb-00 9:08:20 Sentinel None 2 N/A LOMASTER
Opens property sheet for the current selection.

Set “Overwrite events as needed” option.

Click “OK” button.

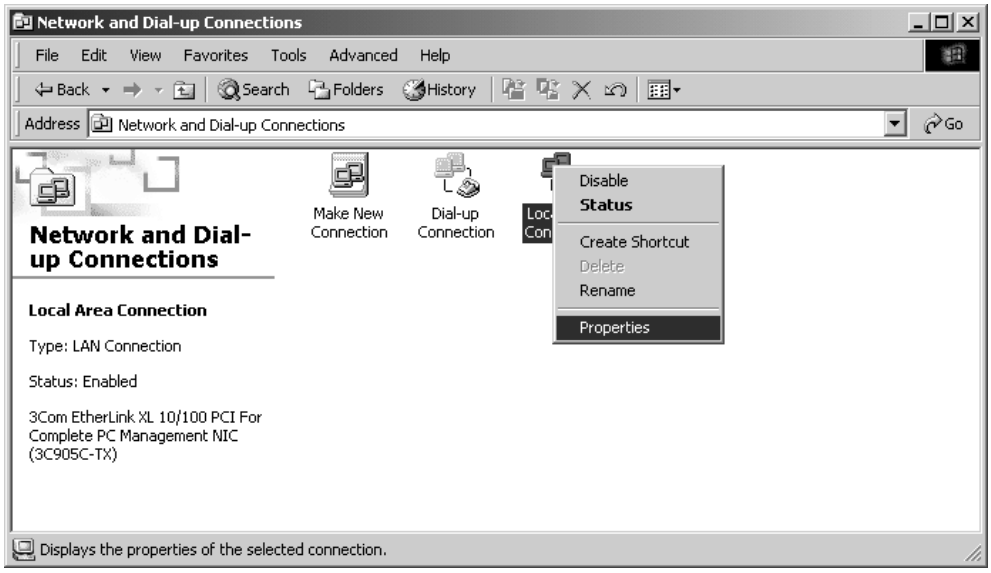


Click “Network and Dial-up Connectors” icon.

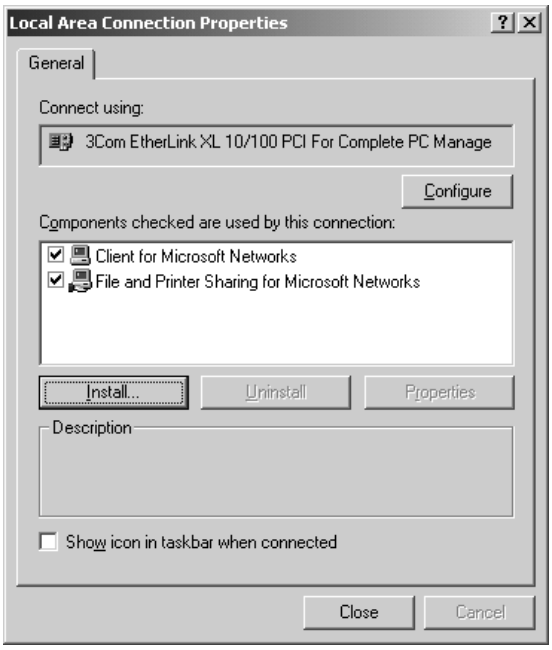


Select “Local Area Connection” icon.

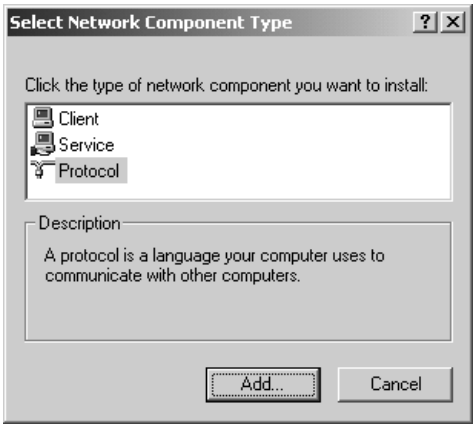
Click right mouse button and select PROPERTIES item.



Click “Install” button.

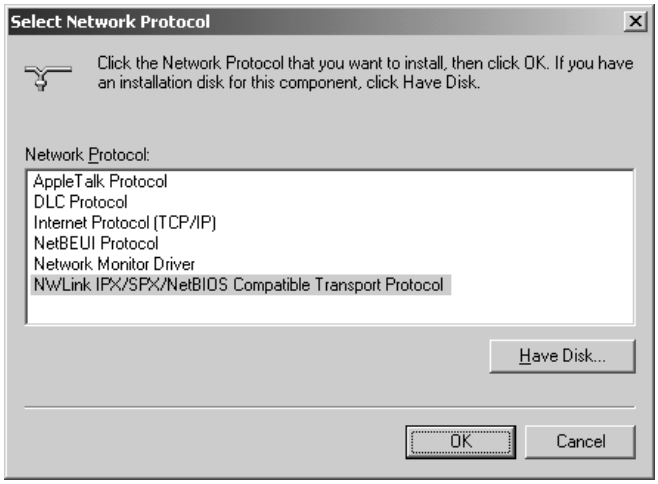


Click “Add” button.



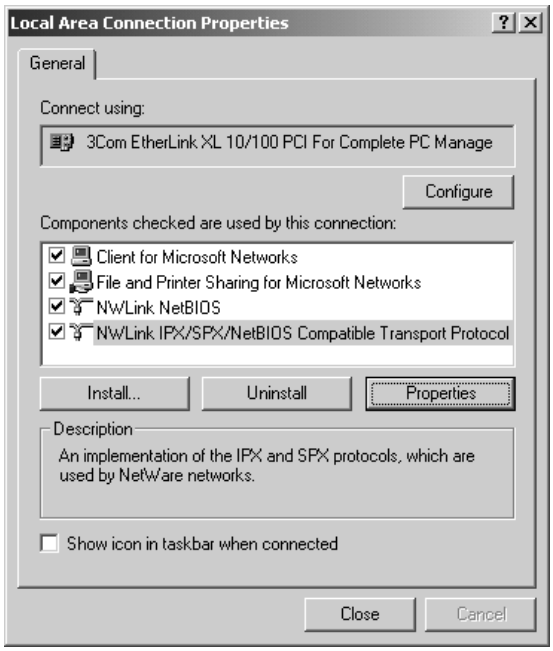
Select “**NWLink IPX/SPX/NetBIOS Compatible Transport Protocol**”.

Click “OK” button.


Select Network Protocol
Click the Network Protocol that you want to install, then click OK. If you have an installation disk for this component, click Have Disk.
Network Protocol:
AppleTalk Protocol
DLC Protocol
Internet Protocol (TCP/IP)
NetBEUI Protocol
Network Monitor Driver
NWLink IPX/SPX/NetBIOS Compatible Transport Protocol
Have Disk...
OK
Cancel

Select “**NWLink IPX/SPX/NetBIOS Compatible Transport Protocol**”.

Click “Properties” button.

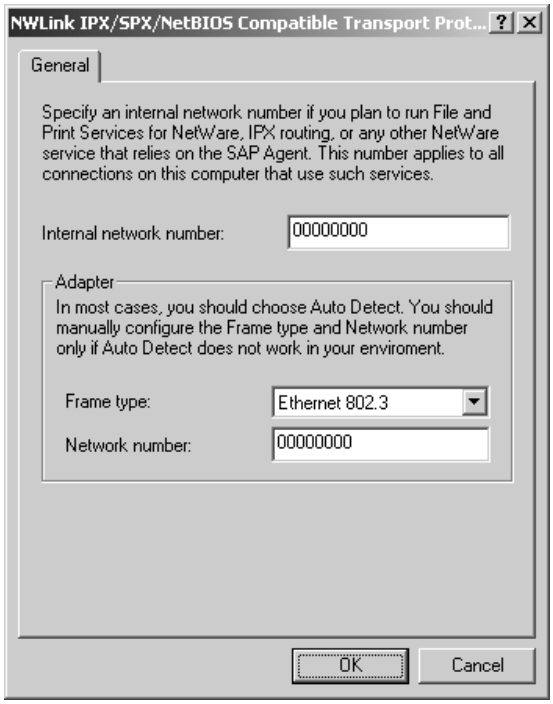


Internal network number – 00000000.

Frame type – Ethernet 802.3.

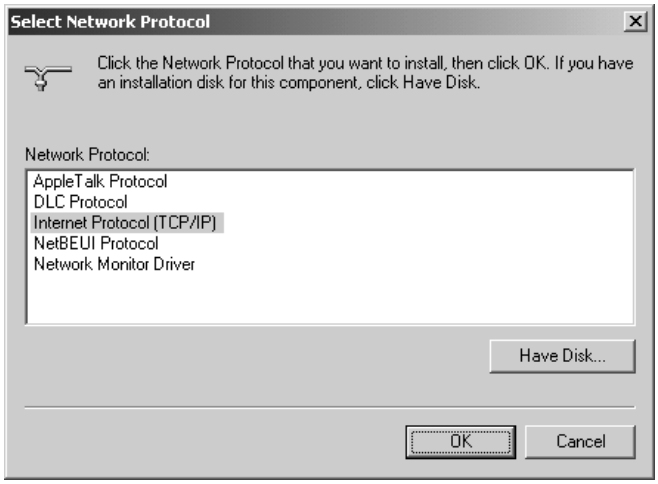
Network number – 00000000.

Click “OK” button.


NWLink IPX/SPX/NetBIOS Compatible Transport Prot...
General
Specify an internal network number if you plan to run File and Print Services for NetWare, IPX routing, or any other NetWare service that relies on the SAP Agent. This number applies to all connections on this computer that use such services.
Internal network number:
00000000
Adapter
In most cases, you should choose Auto Detect. You should manually configure the Frame type and Network number only if Auto Detect does not work in your enviroment.
Frame type:
Ethernet 802.3
Network number:
00000000
OK
Cancel

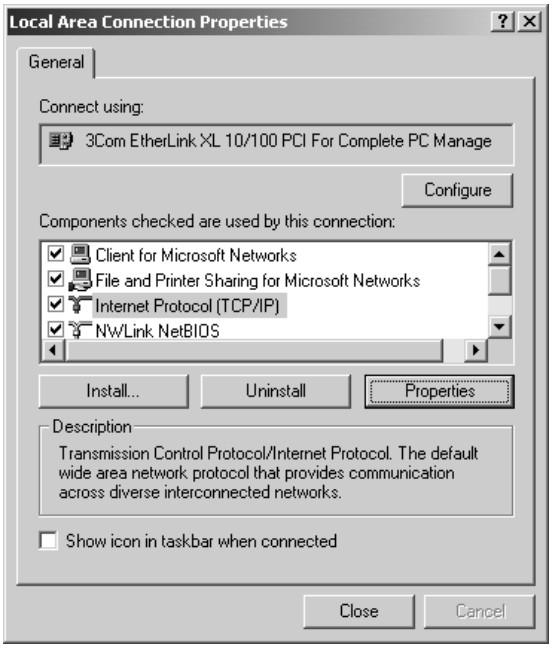
Select “**Internet Protocol (TCP/IP)**”.

Click “OK” button.

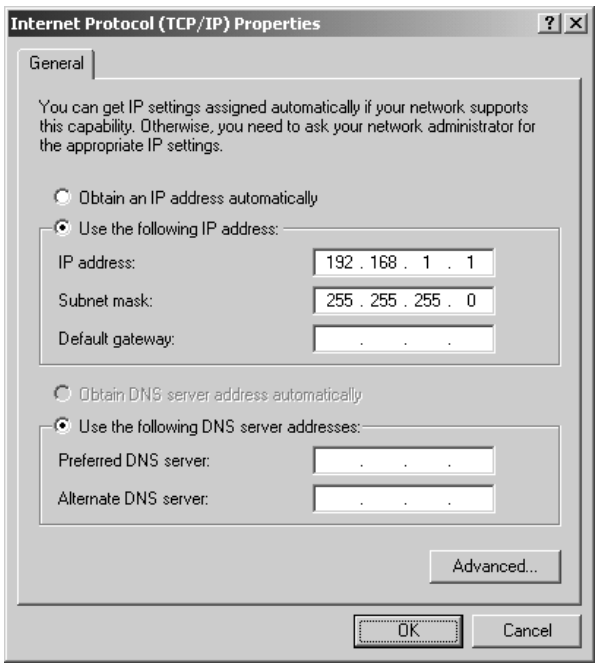

Select Network Protocol
Click the Network Protocol that you want to install, then click OK. If you have an installation disk for this component, click Have Disk.
Network Protocol:
AppleTalk Protocol
DLC Protocol
Internet Protocol (TCP/IP)
NetBEUI Protocol
Network Monitor Driver
Have Disk...
OK
Cancel

Select “**Internet Protocol (TCP/IP)**”.

Click “Properties” button.



Select “Use the following IP address” option.

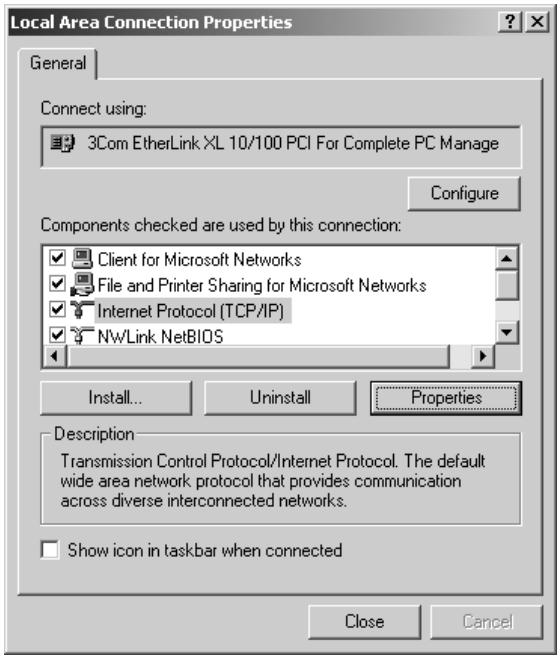

Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 1 . 1
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

Set parameters as follows:

- IP Address – value 192.168.1.1 (this value should be vary for the different computers in the network, e.g. 192.168.1.2);
- Subnet Mask – value 255.255.255.0;
- Default Gateway – empty.

Select “Use the following DNS server addresses” option. Click “OK” button.

Click “Close” button.



Additional COMPORT Board Installation

The installation of the board should be effected in accordance with the board technical documentation.ss.

ANNEX C

Additional Information on Sensor Connections

This annex contains more detailed information on computer's serial ports and RS 232 standard.

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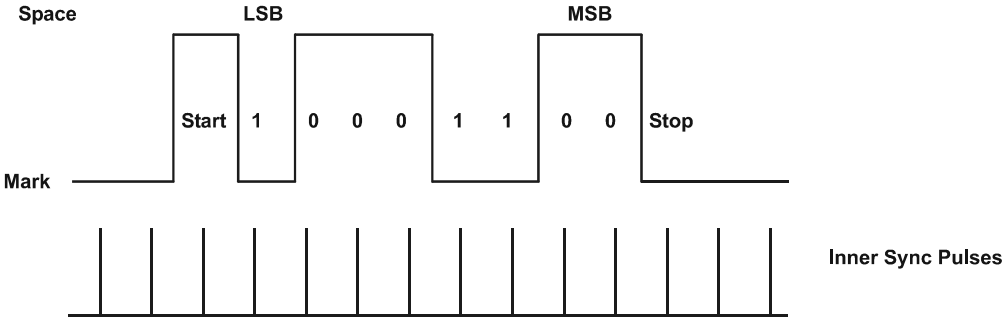
This chapter contains:

COM Ports and RS-232C Standard 293
Matching of Sensors with the COM Ports 296

COM PORTS AND RS-232C STANDARD

For the connection of sensor use the computer's COM ports. Most of the computers are known to have 2 standard ports (COM1 and COM2), but can also use various extension devices: COM3 and COM4, DIGI-Board, MOXA boards, etc.

COM ports transmit and receive data asynchronously in a serial format.



The drawing shows the code of "1" (symbol 031H) in a serial format.
MSB is most significant bit, LSB is least significant bit.

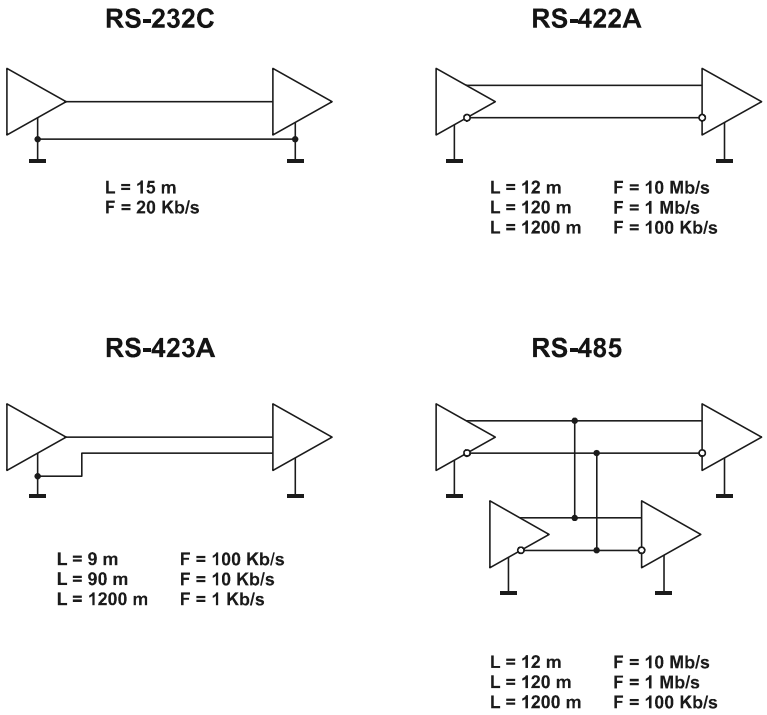
In the case in question the format parameters are as follows:

- Word length is 8 bits, (may be 5-8 bits);
- Parity check is off (Parity None), may be Odd, Even, None;
- Stop bit – 1, may be 1 or 2;
- The Baud rate is determined by the internal sync pulse frequency.

This rate is set via the software facilities by dividing the clock frequency of UART chip (e.g. 16550 A). In this case the following values are obtained:

110, 150, 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

There are several communication (interface) standards using the serial data format. The most common of them are the following: RS-232C, RS-422A, and RS-423A, RS-485. The drawing below shows the connection diagrams corresponding to these standards.


RS-232C
L = 15 m
F = 20 Kb/s
RS-422A
L = 12 m F = 10 Mb/s
L = 120 m F = 1 Mb/s
L = 1200 m F = 100 Kb/s
RS-423A
L = 9 m F = 100 Kb/s
L = 90 m F = 10 Kb/s
L = 1200 m F = 1 Kb/s
RS-485
L = 12 m F = 10 Mb/s
L = 120 m F = 1 Mb/s
L = 1200 m F = 100 Kb/s

Personal computers of IBM PC use RS-232C standard for their COM ports. This standard describes the control signals of the interface, data transmission, electrical interface and types of connectors. In RS-232C the signal is transmitted relative to the common wire – diagram earthing. The logical unit at the receiver input corresponds to the voltage within -12...-3 V range. For the control signals this status is called OFF, for the data this status is called MARK. Logic zero corresponds to the voltage within +3...+12 V range. For the control signals this status is called ON, for the data it is called SPACE.

Between -3...+3 B levels there is insensitivity zone providing the receiver's hysteresis. The signal levels at the transmitter output should be within -12...-5 V and +5...+12 V ranges. The potential difference between the earth on the diagrams should not exceed 2 V; otherwise the data will be incorrect.

Connection and disconnection of interface cables should be carried out with the power supply off.

RS-232C standard specifies the following set of signals:

- RxD – received signals (port input);
- TxD – transmitted data (port output);
- RTS – request for transmission (port output);
- CTS – confirmation of transmission (port input);
- DTR – data terminal ready (port output);
- DSR – data set ready (port input);
- CD – carrier detected (port input);
- RI – call ring control (port input);
- GND – signal earth (connected to the PC casing).

DB9P and DB25P are used as the PC COM port connectors.

The numbers of contacts are given in the table below:

Connection DB25	Name of the signal	Connection DB9
2	TxD	3
3	RxD	2
4	RTS	7
5	CTS	8
6	DSR	6
7	GND	5
8	CD	1
20	DTR	4
22	RI	9

To enable the data exchange between the receiver and the transmitter, it is necessary to set the identical parameters (length of a symbol, parity check, number of stop bits and the rate of reception/transmission) for the receiver and the transmitter. For the control of data exchange between the receiver and transmitter (Flow Control) the following protocols are used: hardware and software (XON/XOFF).

The hardware control uses RTS-CTS, DTR-DSR signals.

The software control of the exchange uses special codes controlling the data flow. XOFF (13H) symbol informs the transmitter that the receiver cannot receive the data. XON (11H) symbol informs the transmitter that the receiver is ready for the data reception.

COM ports use the computer resources: input/output and interrupt line addresses. The standard purpose of the resources is as follows:

	I/O	INTERRUPT
COM1	3F8	4
COM2	2F8	3
COM3	3E8	4 (unsuitable for the NC)
COM4	2E8	3 (unsuitable for the NC)

MATCHING OF SENSORS WITH THE COM PORTS

National Maritime Electronics Association, USA, has issued recommendations, which have lately become the standard for the data exchange between the marine devices.

Data is transmitted serially in the form of ASCII code character lines.

The parameters of the serial code are as follows:

- Baud rate – 4800;
- Word length – 8;
- Parity – None;
- Stop bit – 1.

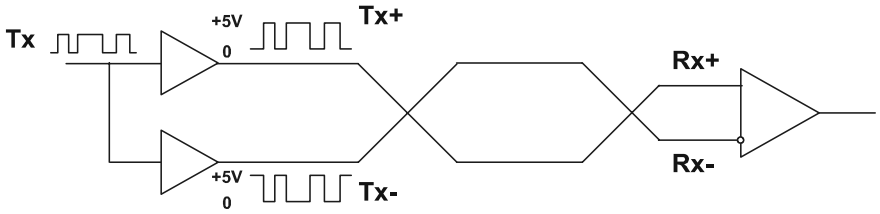
NMEA 0183 sentence (line) looks as follows:

$GPGLL,5927.14,N,10815.36,W,123823.50,A*62<CR><LF>

The instruments are classified in the transmitters (Talker) and receivers (Listener). The Talker and Listener should be connected via an opto isolator.

Apart from RS-232 standard, the serial data format is used by RS-422A, RS-423A standards, CURRENT LOOP, and the instrument manufacturers use these standards for the transmission of NMEA 0183 data.

The drawing below shows the connection corresponding to RS-422A interface.

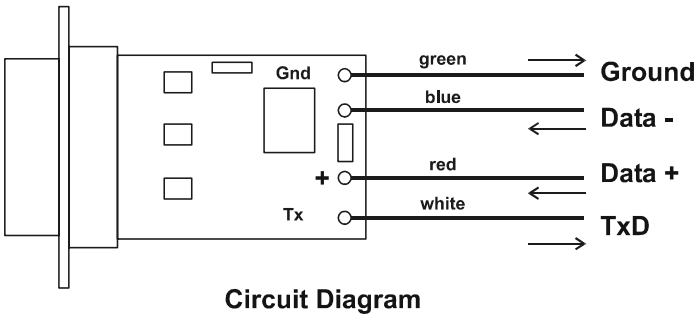


Standard COM port receivers cannot receive RS-423A data, whilst RS-422A, with the sensor and computer having the common earthing, will have a signal short-circuited to the earth. As a result, many sensors cannot be connected to the COM port directly, without converters.

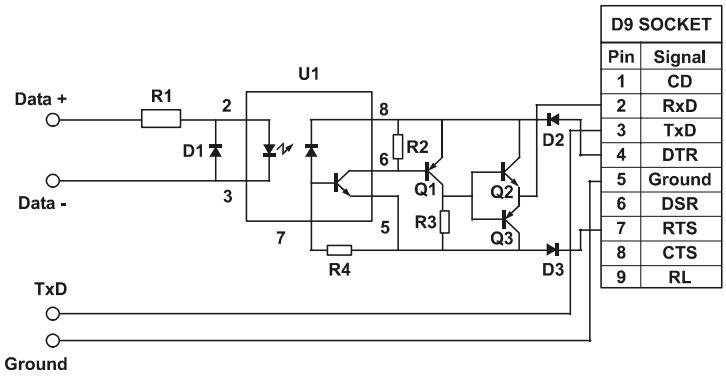
Transas recommends to use opto isolator converters in its navigation systems, which can receive RS-422A, RS 423A, RS-232 signals in the COM ports (one opto- isolator type), as well as current loop signals (another type of opto isolators).

The power supply voltage for both types of opto isolators is taken from RTS and DTR signals. Signals set, via software facilities, the following status:
RTS = OFF (-12 B), DTR = ON (+12 B), which allows the RxD signal to be received within the range of 6 V to +6 V corresponding to RS-232C requirements.

Opto-isolating converter connecting diagram



Circuit Diagram



D9 SOCKET	
Pin	Signal
1	CD
2	RxD
3	TxD
4	DTR
5	Ground
6	DSR
7	RTS
8	CTS
9	RL

Components:

R1 300 k	Transistors:
R2 20 k	Q1 BC807-40
R4 750 k	Q2 BC817-16
R3 10 k	Q3 BC807-16

Diods:	Integrated circuit
D1, D2,	U1 HCPL0501
D3 1N4148	Optoisolator

ANNEX D

Questionnaire

Provided in this annex is an example of completing the Questionnaire table.

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This chapter contains:

Navi-Conning Questionnaire 303
Sensors and Interfaces 303
Screen View 303

NAVI-CONNING QUESTIONNAIRE

Sensors and Interfaces

Sensors	Type of interface	Version	Available NMEA sentences	Type, value of signal (ADC interface)	Remarks
Date and time	NMEA	3.01	ZDA	–	
Ship's Position	Network	NS3000 v.4.00.01	–	–	Quantity:
Heading	NMEA	2.10	VHW, HDT	–	
Speed					
Depth under Keel					
Rudder	ADC	WAGO	–	-6.6/+9.0 volts	Quantity:
Autopilot					
Engine	ADC	WAGO	–	6/18 milliamperes	Quantity: 2 pieces
Pitch					Quantity: 2 pieces
Thruster					Quantity: 2 pieces
Navigational Lights	ADC	Transas CB	–	Discrete signal	Quantity: 16 pieces
Wind speed and direction					
Anchors					
Rate of Turn					
Drift sensors					
Route					
Bow/Stern linear speed					
YOUR Additional interface					
YOUR Additional interface					

Screen View

Quantity and resolution of Screen Views (see Navi-Conning 3000 Technical Specification): _____

Requirements to the displaying the above listed sensors: _____

_____

_____

_____

ANNEX E

Transas Conning Box Testing Method

This annex describes operation of Transas Conning Box Testing Utility.

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This chapter contains:

General **309**
Installation **309**
First Installation 309
Other Installations 310
Testing Procedure **311**
Analog Outputs Unit Group 311
Manual Adjustment for the Analog Outputs (DAC) 312
Testing of Discrete Outputs Unit 313
Description of ID **313**

GENERAL

List of equipment and documents:

- Personal computer with Windows NT (SP5)/W2k (SP3) OS installed;
- Digital multimeter;
- 8-Channel Analogue Output Unit (AOU) (used as a Service Kit);
- Floppy disk with `ExchangeDM.dll` and `ExchangeDM.exe` files;
- Description of the testing procedure:
  - Analogue Input Units -10/+10V;
  - Analogue Input Units 4-20mA;
  - Discrete Input Unit;
  - Discrete Output Units.

INSTALLATION

Connect power cable of the module's 8-channel AOU to the power output of the Interface Main Unit and concatenate CAN cable to the last module in the signal sequence.

JMP1 jumper should be installed in the last module.

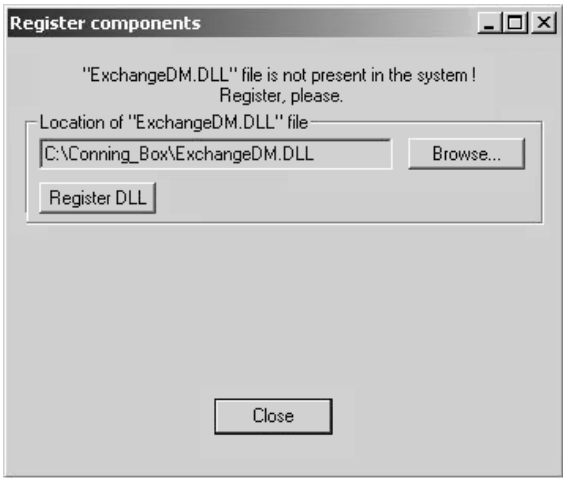
First Installation

Navi-Conning 3000 has not been installed before on the PC or `ExchangeDM.exe` file has not been previously started.

Copy `ExchangeDM.dll` and `ExchangeDM.exe` files to the PC, which the Conning Box will be connected to (do not use subdirectories with spaces in the names).

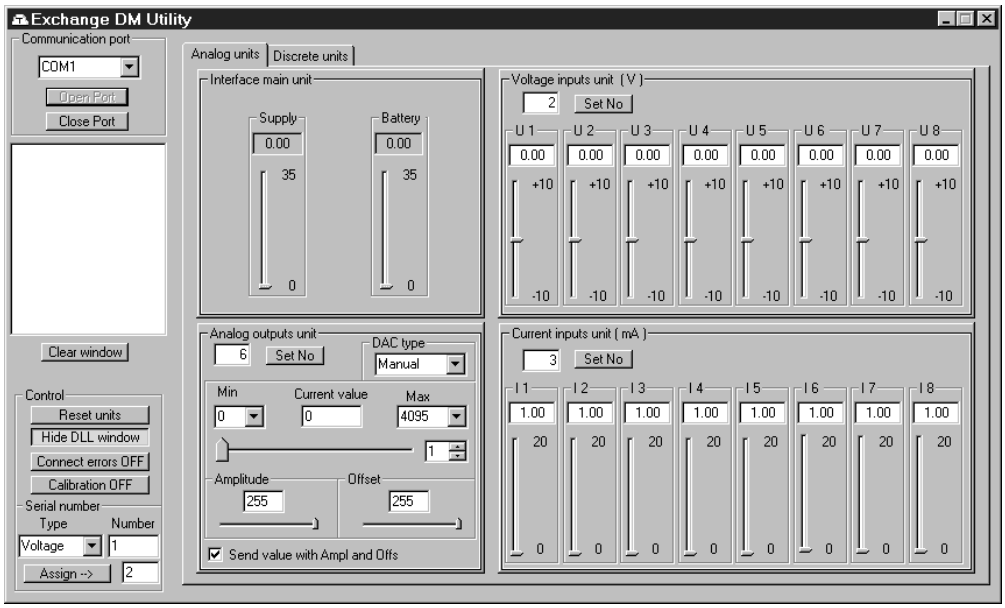
For example: *C:\Conning_Box*.

Run `ExchangeDM.exe` for the first time and make registration of `ExchangeDM.dll` file (press "Register DLL" button).



After the registration, exit from the test program by pressing "Close" button.

Other Installations



In **Communication port** group, select the port, which the Conning Box is connected to.

Press “Open Port” button, and then switch on the Conning Box power supply.

There is a window located under **Communication port** group for information messages such as info about connected units and communication errors.

When you will open port, a list of identified units (except Interface Main Unit) will be displayed in the window.

For example, “Analogue out (8) – 3”:

- Analogue out – the unit name;
- (8) – the last character in the ID (see on the unit label);
- 3 – is the internal number of the unit in the test utility and can be changed automatically after the utility restart (see above).

If you have a lot of messages you can use a button “Clear” window to remove them.

In **Control** group, the following buttons are available:

- **Hide DLL window** button should be pressed;
- **Connect errors OFF** is released;
- **Calibration OFF** should be pressed (recommendation);
- **Serial number** box is not used.

In picture above, **Interface main unit** group you can see that main power supply is ON.

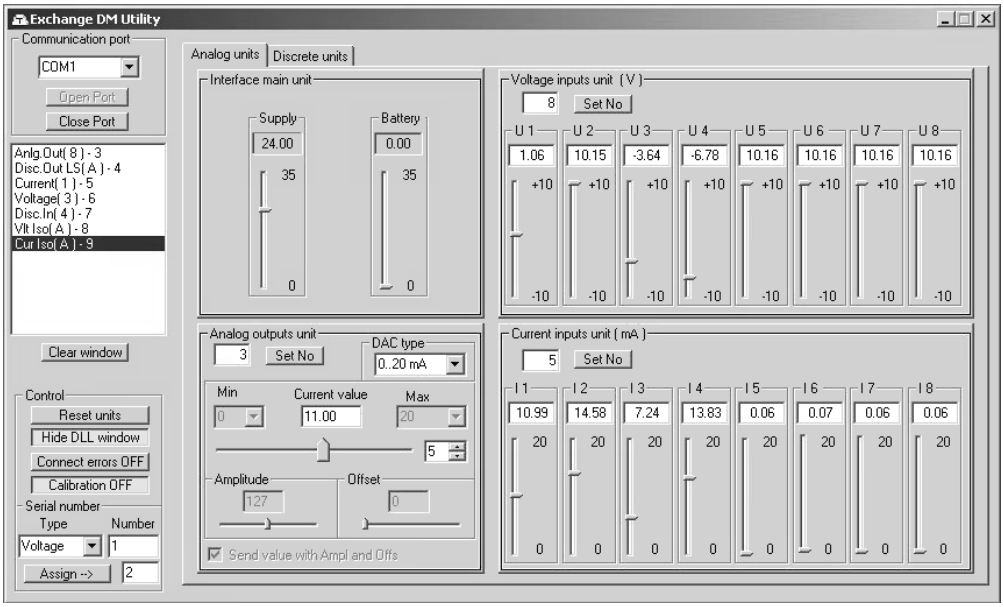
The testing unit has to be identified manually if the Conning Box contains two or more units of the same category.

For example, the list of units presented below includes two voltage units:

- Voltage (3) – 6;
- Vlt Iso (A) – 8.

If it is necessary to test “Vlt Iso” unit, enter 8 in **Voltage inputs unit** box and press **Set No** button. Use the same procedure for other categories of units.

Emergency power supply is ON:



TESTING PROCEDURE

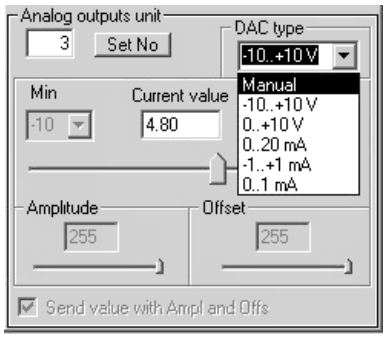
Analog Outputs Unit Group

The connected 8-channel AOU will be identified by the test utility, which will assign it with its own number.

Note: Calibration of AOU channels is made as follows:

- Channels 1 – 4 are in the range of -10 V to +10 V;
- Channels 5 – 8 are in the range of 4 to 20 mA.

In DAC type list box choose the parameter range:



Note: Use the following recommendation:

- To test Voltage inputs unit use –10.+10V range;
- To test Current inputs unit use 4.20 mA range;
- To test Discrete inputs unit use 0.+10V range.

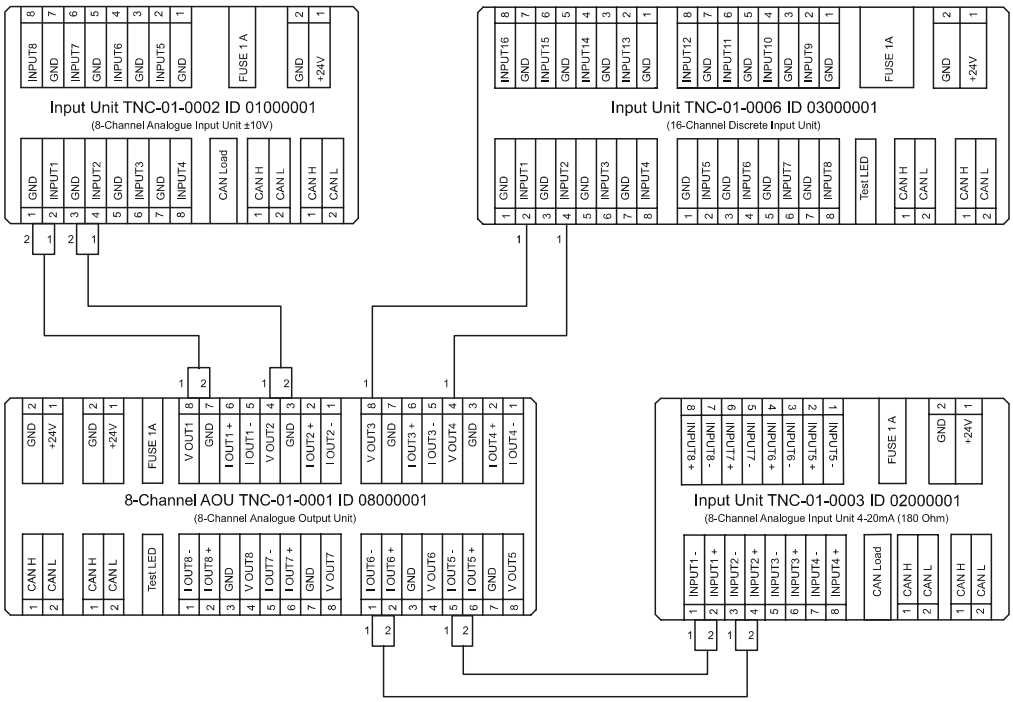
Min, **Max**, **Amplitude** and **Offset** parameters will change as appropriate to the chosen range.

Manual Adjustment for the Analog Outputs (DAC)

In **DAC type** list box choose **Manual**. Set Trimming DAC value for **Amplitude** and **Offset**:

- [7,0] – for 0…1 mA range devices;
- [13,13] – for -1…+1 mA range devices;
- [64,0] – for 0…+5 V/0…10 mA range devices;
- [128,128] – for -5…+5 V/-10…10 mA range devices;
- [255,255] – for -10…+10 V/-20…20 mA range devices.

Connect the unit to be tested as shown in the wiring diagram:

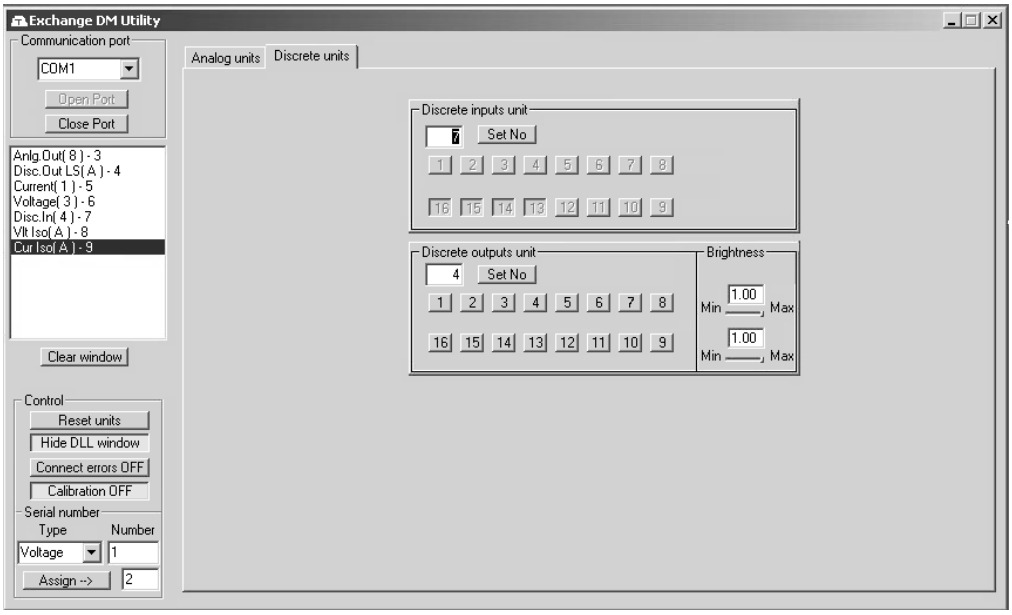

Input Unit TNC-01-0002 ID 01000001
(8-Channel Analogue Input Unit ±10V)
Input Unit TNC-01-0006 ID 03000001
(16-Channel Discrete Input Unit)
8-Channel AOU TNC-01-0001 ID 08000001
(8-Channel Analogue Output Unit)
Input Unit TNC-01-0003 ID 02000001
(8-Channel Analogue Input Unit 4-20mA (180 Ohm)

Select the number of the connected channel (from the list box to the right of the slider), and vary the value in the channel manually by using the slider:

"Current value" is output value in the corresponding channel. See changes on the corresponding connected channel of Analog Input Unit. For Voltage units – channels **U1-U8**, for Current units – channels **I1- I8**.

For corresponding discrete input, you can see changes in **Discrete inputs unit** group indicated by the pressing or releasing of buttons, see picture below.

In case of 5.7-5.8 V in the output channel, the corresponding button of the discrete input will blink.



Testing of Discrete Outputs Unit

Enter the tested unit number in Discrete outputs unit box.

Press the button of the channel to be tested and connect voltmeter to this channel.

The output voltage will appear.

Output voltage of whole channels can be smoothly changed by moving “Brightness” slider (only for Discrete Outputs LS Unit).

DESCRIPTION OF ID

XXYYYYYY is an ID (marked on top of every unit):

- XX defines the type of the device:
  - 00 – Interface Main Unit;
  - 01 – 8-Channel Analogue Input Unit -10/+10V;
  - 02 – 8-Channel Analogue Input Unit 4-20mA (18 Ohm or 180 Ohm);
  - 03 – 16-Channel Discrete Input Unit;
  - 04 – 4-Channel (Isolated) Analogue Input Unit -10/+10V;
  - 05 – 4-Channel (Isolated) Analogue Input Unit 4-20mA (18 Ohm or 180 Ohm);
  - 06 – 16-Channel DOU (LS);
  - 07 – 16-Channel DOU (HS);
  - 08 – 8-Channel AOU.
- YYYYYY – unique number in hexadecimal format.p